

Report of H. HUANG's 2000 Expedition to SE. Tibet for Rhopalocera (Insecta, Lepidoptera)

by

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Abstract: A full report of the butterflies collected by the author from SE. Tibet during the summer of 2000 is presented. The collection was mainly from the Chayu area, the extreme southeast of Tibet and the Tibetan part of the Nujiang Valley (upper water of the Salween). 14 new species and 26 new subspecies are described from that collection. In addition a new subspecies of *Rapala* from the Yunnan-Vietnam border and a new subspecies of *Lethe maitrya* from NW. Yunnan are described. In the complete list of this collection some species groups are revised and some new combinations and new statii are given.

Introduction

The extreme southeast of Tibet, at best called Chayu area, consists of vast forests along the Chayu River (the most eastern tributary of the Brahmaputra) and the Nujiang River (upper water of the Salween) below the snow line of the Po-shu-la-ling Mts. It is a very interesting area concerning Rhopalocera. However, only two reports have ever been published, which more or less only touch the western part of this area, the valleys of Chayu River. The first was written by R. SOUTH (1913) on a collection made by the famous F. M. BAILEY from W. Sichuan, Mangkang area, Chayu area (Drowa Gongpa) and Mishimi hills in 1911. The second was written by C.-L. LEE (1982) on a collection made by the Academia Sinica Expedition to Tibet during the 1970s. Each expedition had brought new species to science, especially the one by BAILEY. But this western part is still much less known in entomology than other southern Tibetan areas. Moreover, the eastern part, the area around Nujiang River has never been touched in entomology. I have attempted to explore this area in the summer of 2000 and the localities are dated as follows. On July 15th at Er-lang-shan Mt., on July 17th at Litang, on July 19th at 50 km northeast of Batang, from July 20th to 21st at Wenquan, 50 km east of Mangkang, on July 22nd at Dongdala Pass, on July 23rd at Yela Pass and on July 25th at Demula Pass. From July 26th to August 6th I was between Lower-Chayu and Upper-Chayu, mostly at Tiyu. From August 7th to August 10th I was at Chayu, then again at Demula Pass on August 11th. From August 14th to August 26th I was at Chayu. Between August 27th and September 2nd I was marching from Chayu to Chawalong that was just by the Nujiang River. My route along the Nujiang River, September 2nd to September 6th, was Qu-zhu, Genong, Longpo, Songta and Nidadan. Then I entered Yunnan Province and finished my collecting trip at Pianma, the Burma-Yunnan border.

This paper contains two parts, in the first the new descriptions are given and in the second the full list of the collection and revisional notes are presented. To make the readers clear about the localities, a detailed map of the collecting localities (fig.121—p. 133) is also included.

All the holotypes are now preserved in the biological laboratory of Qingdao Education College, Qingdao, China. The paratypes are mostly preserved in my private collection and some will be presented to some public museums and some colleagues' private collections.

New Descriptions

Hesperiidae

1. *Celaenorrhinus ratna nujiangensis* subsp. nov. (Colour plate I, fig. 1)

Diagnosis

This new subspecies from the Nujiang Valley is easily distinguishable from all the three previously known subspecies of *C. ratna* FRUHSTORFER, 1909 by the following combination of characters in the females:

- 1) All yellow spots on both sides of the hindwing are more fully developed than in ssp. *ratna* from Taiwan and ssp. *tytleri* EVANS, 1926 from the Naga Hills, the spots in the discocellular cell and in space 7 clearly defined even on the upperside, whereas in ssp. *daphne* EVANS, 1949 from Kumaon, NW. Himalayas they are very much reduced.
- 2) The forewing underside space 1b has no spot beyond the discal two spots, which is only present in ssp. *ratna*.
- 3) The subbasal spots in space 1b on both sides of the forewing are more clearly defined and much bigger than in all the other subspecies.
- 4) The forewing discal spot in space 2 is very widely separated from either discocellular spot or spot in space 3, not in contact with them as in all the other subspecies.

Remarks

This new subspecies can be safely placed into the position of *C. ratna* in Evans' key, it differs remarkably from all the other known species by the key characters in EVANS. Whether it is independent from *C. ratna* in specific level is still a problem, which needs examination of the male genitalia in future.

Type data

Holotype ♀: LF 24 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet-Yunnan border, September 6th 2000.

The name is due to the Nujiang River which cuts across the type locality of the new subspecies.

2. *Notocrypta eitschbergeri* spec. nov. (figs 1, 2; colour plate I, fig. 2)

Diagnosis

This new species is very similar to *Notocrypta curvifascia* (FELDER, 1862) which has been originally described from East China and is also known from S. China, Taiwan, Japan, Hainan, Indo-China, the Himalayas, India, Sumatra and Java, but can be distinguished from the latter by the following combination of characters in the males:

- 1) The forewing discal white band is much broader than in all of the seasonal forms of *N. curvifascia*.
- 2) The male genitalia (good hand drawings for *curvifascia* can be found in KAWAZOE & WAKABAYASHI, 1976, and SHIROZU, 1960; 2 ♂♂ of *curvifascia* from Yunnan also examined): the distal process of the cuiller is apparently longer than in *N. curvifascia*, well beyond the dorsal margin of the valva; the inner process of the cuiller is longer than in *N. curvifascia*, almost touching the dorsal margin of the valva.

Additional description

Antennae longer than half of the forewing costa, blackish in colour on both sides, ringed with whitish at base of the club on both sides, weakly marked with a pale dot just before apiculus on the underside, nudum 3 in club proper and 10 in apiculus. Body brown below. Forewing origin of vein 4 nearer to origin of vein 3 than to origin of vein 5. Forewing upperside discal band not entering base of space 3 and

not extended above radius to costa. Both sides of forewing with apical spots in spaces 6–8 and also in spaces 3–5, forewing underside discal band not produced above the radius towards costa. Forewing length of male 21 mm.

Remarks

The new species can be distinguished from all other species by the both sides' forewing postdiscal white dots in spaces 3–5 and subapical white dots in spaces 6–8 present and clearly defined, forewing underside discal band not produced above the radius towards costa and in male genitalia by the inner process and distal process of cuiller conspicuously longer.

The recently described *N. morishitai* Liu & Gu, 1994 from Hainan is just either a synonym or an ecological form of *N. curvifascia*. It was said by its authors to differ from *curvifascia* in having the white dots absent in spaces 3–5 and being dusted more with pale scales near the outer margins of both wings, however such a difference had been discussed already by EVANS (1949) as ecological variation of *curvifascia*, moreover the illustration of the male genitalia of *morishitai* leave no doubt that *morishitai* in fact is *curvifascia*.

Type data

Holotype ♂: LF 21 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet, September 6th 2000.

This new species is named in honour of Dr. ULF EITSCHBERGER who has paid great attention to the study of Chinese butterflies.

3. *Ochlodes subhyalina chayuensis* subspec. nov.

(fig. 3; colour plate I, figs 3, 4)

Diagnosis

According to EVANS (1949: 354), three well defined subspecies were previously known: ssp. *subhyalina* BREMER & GREY, 1853 distributed in North China, Japan, Korea, South China, Sichuan and N. Burma; ssp. *pasca* EVANS, 1949 in Khasi Hills, Assam and Sikkim; and ssp. *formosana* MATSUMURA, 1919 from Taiwan. The new subspecies described here forms the transition from ssp. *subhyalina* to ssp. *pasca*: 1) size (length of forewing 15 mm) as in ssp. *pasca*, smaller than in ssp. *subhyalina* (length of forewing 17–19 mm); 2) forewing termen, as well as in ssp. *pasca*, more rounded than in ssp. *subhyalina*; 3) forewing underside spot in space 1b large and less defined as in ssp. *subhyalina*, not small and sharply defined as in ssp. *pasca*; 4) hindwing underside veins more or less darkened as in ssp. *subhyalina*, whereas in ssp. *pasca* they are not darkened.

Moreover, compared with ssp. *subhyalina*, the new subspecies has no forewing upperside spots in spaces 4 and 5 in both sexes, the forewing upperside cell spots are conjoined in the female, and the hindwing upperside ground colour is darker in the basal and discal area, especially in the female.

The new subspecies can be very easily distinguished from ssp. *formosana* by the brighter and more yellowish ground colour on the upperside and the larger spots.

Remarks

The male genitalia of the new subspecies have been examined and compared with specimens of ssp. *subhyalina* from West Sichuan and North China. The tip of the cuiller is more pointed in ssp. *subhyalina* (fig. 4) than in the new subspecies (fig. 3).

In external features, the new subspecies can be distinguished from *Ochlodes thibetana* (OBERTHÜR, 1886) in the males by the forewing upperside cell spots being less extended towards the wing base, in the females by the forewing upperside spot in space 3 being more extended along vein 3 toward termen of the forewing. In male genitalia, all subspecies of *O. subhyalina* have the inner process of the cuiller much shorter than in *O. thibetana* (fig. 5).

The new subspecies is not strictly sympatric with *Ochlodes thibetana*, I have not seen any *O. thibetana* from Chayu, and as well I have not found any *O. subhyalina* from Batang, Mangkang and Chawalong where *O. thibetana* flies.

Type data

Holotype ♂: LF: 16 mm, Chayu, Chayu area of Tibet, 2300 m, August 6th, 2000.

Paratypes: 7 ♂♂, 2 ♀♀, Chayu, Tiyu, 2000–2400 m, July and August 2000.

This new subspecies is named after its type locality.

4. *Potanthus taqini* spec. nov.

(figs 6, 7; colour plate I, fig. 5)

Diagnosis

This new species is very different from all the previously known species of *Potanthus* in male genitalia. In external features it is somewhat close to *P. pseudomaesa* MOORE, 1881 from India, the Himalayas and S. China, *P. confucius* FELDER, 1862 (strictly sympatric with the new species) from nearly the whole Oriental Region and *P. mara* EVANS, 1932 from the Himalayas and Guizhou. In the shape of the uncus in dorsal view, it is somewhat similar to *P. juno* EVANS, 1932 from the peninsular part of Indo-China, Assam and Taiwan, *P. amor* EVANS, 1932 from Timor, Sumba and Oinanaia, *P. flava* MURRAY, 1875 from Japan, Burma, Naga Hills and Mindanao and *P. mingo* EDWARDS, 1866 from the Philippines, Java, Assam, Burma and Indo-China, in the shape of the valva it is a little close to *P. omaha* EDWARDS, 1863 from Malaya, Sumatra, Borneo, Mindanao, Celebes and Burma and *P. motzui* Hsu, LI & LI, 1990 from Taiwan. In the following diagnostic characters, the new species is mainly compared with the above-mentioned species in the males.

- 1) The yellow cell spot on both sides of the forewing is extensively marked in the outer half of the discocellular cell, more conjoined with the yellow spots in spaces 9–11 than in all other species.
- 2) The hindwing discal spots are clearly marked in spaces 6 and 7 as in *P. pseudomaesa* and *P. mara*, not absent in space 5 as in all other species.
- 3) The hindwing underside ground colour is similar to that of *P. amor* and *P. omaha*, but darker than in other species, with all the yellow spots clearly defined as in *P. amor* and *P. omaha*, not associated with black spots as in *P. pseudomaesa*, *P. juno*, *P. confucius*, *P. mara* and *P. mingo*.
- 4) Male genitalia: in dorsal view the uncus is gradually tapered towards the tip and ends in two points as in *P. juno* and *P. amor*, but the end of the uncus is like a shallow "V" with shoulders angled as in *P. amor*, not rounded as in *P. juno*, and is somewhat excavate between the shoulders like in *P. flava*, but not so remarkably as in *P. flava*, thus different from all other species; The cuiller is pointed obtusely at the tip and broader in shape than in all other species; The apex of the clasp is slightly convex and rounded as in *P. omaha* and *P. motzui*, not strongly convex forming a process as in all other species.

Type data

Holotype ♂: LF 13 mm, Chayu, Chayu area of Tibet, 2200 m, mid August 2000.

Paratype: 1 ♂, LF 13 mm, same data as holotype.

This new species is dedicated to Mr. TAQIN of Chayu, who has helped me very much during my exploration to Chawalong.

Lycaenidae**5. *Everes argiades nujiangensis* subspec. nov.**

(Colour plate I, fig. 7; colour plate III, fig. 21)

Subspecific classification

There are great individual and seasonal variations in this species, thus the geographical variations are often somewhat difficult to determine. However LORKOVIĆ (1943) had finished a perfect revision of this species and recognised four valid subspecies in East Asia: ssp. *hellotia* (MENETRIES, 1857) from E. Siberia, Amur, Japan, Korea, NE. China (Heilongjiang, Liaoning, Jilin), N. China (Beijing, Hebei, Shandong, Henan, Shaanxi), Sichuan on east of Batang (specimens from Guangxian and Tatsienlu examined,

recorded by LORKOVIĆ also from Kunkalashan, Omei, Songpan, Jin-fu-shan, SE. Sichuan), Jiangsu, Zhejiang, Shanghai, Fujian and Hunan; ssp. *merisina* LORKOVIĆ, 1943 from Guangdong; ssp. *tibetanus* LORKOVIĆ, 1943 (col. pl. I, fig. 6; col. pl. III, fig. 17) (= ssp. *sericana* MURAYAMA, 1995 **syn. nov.**, type locality: Tuguancun, on the road between Zhongdian and Lijiang, NW. Yunnan, holotype being a specimen of the first generation of ssp. *tibetanus*) from Batang, Sichuan-Tibetan border (specimens of the second generation from Batang and Mangkang examined), Atuntse (near Zhongdian) and Lijiang, NW. Yunnan (specimens of the second generation from Lijiang and Zhongdian examined); ssp. *diporides* CHAPMAN, 1908 from E. Himalaya, Assam and N. Burma. After that only ssp. *seidakkadaya* MIYASHITA & UEMURA, 1976 had been added from Taiwan.

The individual and seasonal variations are mainly in size, upperside ground colour in male, appearance of hindwing upperside tornal red spots in female, width of blackish marginal band in male, presence of upperside discocellular bar in male, size of underside black spots and size of underside submarginal spots. This species at least has a spring-generation and a summer-generation; the summer form usually being of larger size, the upperside marginal band wider, underside spots bigger and all markings more prominent than in the spring form. However the external features in underside ground colour and the appearance of ciliae are rather constant in a single subspecies and can serve as key characters to distinguish the geographical variations. Moreover the constant difference in corresponding seasonal forms can be used as diagnostic characters to recognise the subspecies as well.

The name *sericana* MURAYAMA, 1995 is treated here as junior synonym of *tibetanus*, because the type locality of *sericana* (Tu-guan-cun, just between Lijiang and Atuntse) is just within the paratype localities (Lijiang, Atuntse) of LORKOVIĆ's *tibetanus*, its author has overlooked the publication of *tibetanus* and the unique holotype (captured on 8 May 1995) of *sericana* in appearance clearly belongs to the spring form of *tibetanus* (according to the original description and photos). I also have examined several specimens of the summer form from NW. Yunnan and Batang, the population from NW. Yunnan cannot be separated from that of Batang.

Diagnosis

The type series of this new subspecies has been taken in early September and most probably represents the second generation. It inhabits the Tibetan part of the Nujiang Valley and looks like ssp. *tibetanus* in external features, but can be distinguished from all seasonal forms of the latter by the following combination of characters:

- 1) Both sexes: the underside ground colour is more whitish and paler than in ssp. *tibetanus*, not so greyish as in ssp. *tibetanus*.
- 2) Male: the outer ciliae of the forewing upperside are more whitish, not so dark as the inner ciliae, whereas in ssp. *tibetanus* both inner and outer ciliae are dark.
- 3) Male: on the underside both wings' discocellular bar is faint and weak, not so blackish as in all seasonal forms of ssp. *tibetanus*.

This new subspecies can be distinguished from ssp. *diporides* from E. Himalaya, Assam and N. Burma simply by the underside ground colour being much more whitish, whereas in *diporides* the ground colour is grey, even darker than in ssp. *tibetanus*.

This new subspecies can be distinguished from all seasonal forms of ssp. *merisina* from Guangdong by the forewing underside discocellular bar being weaker in the male, and from the corresponding summer form of ssp. *merisina* by the upperside marginal band being much narrower in the male.

Type data

Holotype ♂: LF 13 mm, Chawalong to Longpo, Nujiang Valley, SE. Tibet, September 3rd and 4th 2000.

Paratypes: 4 ♂♂, 3 ♀♀, same data as holotype.

The name is after the Nujiang River which cuts across the type locality of the new subspecies.

6. *Everes argiades chayuensis* subsp. nov.

(Colour plate I, fig. 8; colour plate III, fig. 22)

Diagnosis

This new subspecies from the Chayu area, SE. Tibet can be distinguished from its closely distributed ssp. *tibetanus* and ssp. *nujiangensis* by the following combination of characters in the summer form:

- 1) Male: the hindwing upperside bears tornal red spots, which are absent in the corresponding summer form of ssp. *nujiangensis* (the spring generation of *nujiangensis* is unknown at present) and all seasonal forms of ssp. *tibetanus*.
- 2) Male: the forewing upperside marginal blackish band is apparently broader than in the corresponding summer form of ssp. *nujiangensis* and all seasonal forms of ssp. *tibetanus*.
- 3) Male: the discocellular bar on the underside of both wings is as prominent as in ssp. *tibetanus*, not reduced as in ssp. *nujiangensis*.
- 4) Both sexes: the underside ground colour is as pale as in ssp. *nujiangensis*, but more whitish and much paler than in all seasonal forms of ssp. *tibetanus*.
- 5) Both sexes: the submarginal spots in spaces 2–4 of forewing underside apparently bear red scales, which are hardly seen in all seasonal forms of either *tibetanus* or *nujiangensis*.

This new subspecies can be distinguished from ssp. *diporides* simply by the underside ground colour which is more whitish and much paler.

This new subspecies is rather astonishingly similar to ssp. *merisina*, but can be distinguished from all seasonal forms of the latter simply by the upperside ground colour being darker and more violet and the hindwing underside discocellular bar being more prominent. Moreover it is separated from *merisina* in zoogeography by *nujiangensis* and *tibetanus*.

Remarks

The male genitalia of both *nujiangensis* and *chayuensis* have been examined and proved to be *E. argiades*.

Type data

Holotype ♂: LF 13 mm, Lower-Chayu, Chayu area of Tibet, July 26th to early August 2000.

Paratypes: 7 ♂♂, 3 ♀♀, same data as holotype.

The subspecific name is due to the type locality of the new subspecies.

7. *Tongeia bella* spec. nov.

(figs 8, 15; colour plate I, fig. 9)

Diagnosis

This new species is sharply distinguishable from all the previously known species of *Tongeia* [*T. fischeri* (EVERSMANN, 1843), *T. filicaudis* (PRYER, 1877), *T. hainani* (BETHUNE-BAKER, 1914), *T. ion* (LEECH, 1891), *T. zuthus* (LEECH, 1893), *T. kala* (DE NICEVILLE, 1890), *T. menpae* HUANG, 1998, *T. davidi* (POUJADE, 1885) and *T. potanini* (ALPHERAKY, 1889)]. The remaining *Lycaena arcana* LEECH, 1890 doubtfully belongs to *Tongeia* by the following combination of characters:

- 1) On the forewing upperside a pale blue discocellular bar, which has not been found in all other species, is clearly defined.
- 2) On the hindwing underside all the submarginal spots bear metallic blue scales, whereas in all other species only the tornal ones in spaces 2 and 3 have metallic scales.
- 3) All discal spots on the hindwing underside are of the same width and upright to the veins, different from all other species in appearance.
- 4) Male genitalia: in all species of *Tongeia* examined, there is an additional process just posterior to the sacculus and connected with the valva, which can be called harpe, such a harpe is usually situated on the inner side of the valva; in *T. bella*, the harpe is extremely developed as a very long and sharply pointed spine, the distal half of the valva is much more narrower than in all other species and not over-

lapped with the harpe; illustrations of the male genitalia of *Tongeia* species can be found in the following literature (SHIROZU, 1960 for *T. hainani* and *T. filicaudis*; HUANG, 1998 for *T. ion*, *T. zuthus* and *T. menpae*; CANTLIE, 1964 for *T. kala*). *T. fischeri* and *T. potanini* have been examined also by me together with the new species described below, only *T. davidi* and *Lycaena arcana* are still unknown in male genitalia.

Type data

Holotype ♂: LF 10.5 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet, September 6th 2000.

The specific name is due to the beautiful appearance of the new species.

8. *Tongeia amplifascia* spec. nov.

(figs 9, 16, 29; colour plate II, figs 10, 11)

Diagnosis

This new species from Chawalong in the Nujiang Valley is very close to *Tongeia ion* [consisting of ssp. *ion* (figs 13, 20; col. pl. II, fig. 13) from W. Sichuan (Kangding) and N. Yunnan (Binchuan, Kunming), ssp. *cratylus* (FRUHSTORFER, 1915) (figs 14, 21; col. pl. II, fig. 12) from Sichuan-Tibetan border (Batang and Mangkang) and ssp. *cellariusi* (BOLLOWS, 1930) from East Gansu (Qinling Mts.)], but can be distinguished from the latter by the following combination of characters in all seasonal forms of both sexes: 1) The upperside ground colour is black, not blackish brown as in *T. ion*; this is based upon an examination of fresh specimens of the new species and *T. ion ion*; worn specimens of *T. ion cratylus* have also been examined, in worn specimens the new species is conspicuously much darker and blacker than in both *T. ion cratylus* and *T. ion ion*.

2) On the forewing underside the discal spot in space 4 is more oblique to vein 4 than in *T. ion*.

3) On the hindwing underside the discal spots in spaces 3, 4 and 5 have their inner margins in a straight line, whereas in *T. ion* (all seasonal forms have been accounted) the spot in space 4 always has its inner margin projecting inside of the spot in space 5, often touching the discocellular bar in the dry seasonal form.

4) Male genitalia (figs 9, 13, 14, 16, 20, 21): the valva is invariably shorter and smaller than in *T. ion*, more apparently serrate at the posterior margin than in *T. ion*, the harpe is also shorter than in *T. ion*, and the juxta is shorter too, the aedeagus is conspicuously thinner and shorter; the male genitalia of *T. ion ion* and *T. ion cratylus* have been examined, although the specimens are of same size as in some individuals of *T. amplifascia*, their male genitalia are invariably much larger than in all individuals of *T. amplifascia*; only *T. ion cellariusi* has not been examined in male genitalia, but the distribution and the apparent allopatric evolution among all these closely related taxa strongly suggest *cellariusi* having nothing to do with *T. amplifascia*.

Remarks

Two ecological forms of the new species have been collected together from the localities: one has the hindwing underside discal spots more reddish in colour and their outer area not completely white, corresponding to the wet-seasonal form of *T. ion ion*, the other has the discal spots more greyish brown and their outer area completely white, corresponding to the dry-seasonal form of *T. ion ion*. The size is very variable among all the forms.

Type data

Holotype ♂: LF 13 mm, Chawalong to Quzhu, Nujiang Valley, SE. Tibet, September 3rd 2000.

Paratypes: 7 ♂♂, 2 ♀♀, LF 10–13 mm, same data as holotype.

The specific name refers to the very broad discal fascia on hindwing underside of the new species.

9. *Tongeia pseudozuthus* spec. nov.

(figs 10, 17, 30; colour plate II, figs 14, 15)

Diagnosis

This new species is closer to *T. zuthus* (figs 11, 18, 31) and *T. amplifascia* than to all other species in external features and closer to *T. zuthus* than to all others in male genitalia, but can be distinguished from them as well as *T. ion* (figs 13, 14, 20, 21; col. pl. II, figs 12, 13) and *T. menpae* (figs 12, 19) by the following combination of characters in both sexes:

- 1) The upperside ground colour is black as in *T. amplifascia*, not blackish brown as in *T. zuthus*, *T. ion* and *T. menpae*.
- 2) The forewing underside discal spot in space 4 is less oblique than in *T. amplifascia*, but as oblique as in all others.
- 3) The hindwing underside discal spots in spaces 3–5 have their inner margins almost in a smooth line as in *T. amplifascia*, not projecting in space 4 as in *T. ion*, and have their outer margins touching the submarginal markings as in *T. ion*, *T. amplifascia*, not well separated from the submarginal markings as in *T. zuthus* and *T. menpae*.
- 4) Male genitalia (figs 9–14, 16–21): the valva is smaller and shorter than in *T. ion*, as long as in *T. zuthus*, *T. amplifascia* and *T. menpae*, and is more pointed at the apex with the posterior margin more oblique to the dorsal margin than in *T. zuthus* and *T. menpae*, but similar to that of *T. amplifascia*, and is broader near the tip than at the base, not tapered towards the tip as in *T. ion* and *T. amplifascia*; the posterior margin of the valva is not serrate as in *T. amplifascia*, with the posterior hook curved inwards as in *T. zuthus* and *T. menpae*, not pointed backwards as in *T. ion* and *T. amplifascia*; the harpe is as narrow as in *T. zuthus*, but much narrower than in *T. ion* and *T. amplifascia* and much shorter than in *T. ion* and *T. menpae*.
- 5) Female genitalia (figs 29–31): (only compared with *T. zuthus* (fig. 31) and *T. amplifascia* (fig. 29), the female of *T. ion* is unavailable to me at present) the difference is mainly in the shape of the genital plate and the position of the ostium; *T. pseudozuthus* (fig. 30) has the genital plate much more rounded and broader at the anterior margin than the other two; both *T. pseudozuthus* and *T. amplifascia* have the ostium situated more posteriorly on the genital plate than in *T. zuthus*.

Remarks

This new species has been captured at first by F. M. BAILEY at the Chayu area and was misidentified as *T. ion* and *T. zuthus* by SOUTH (1913).

Type data

Holotype ♂: LF 11.5 mm, Chayu, Chayu area of Tibet, August 8th 2000.

Paratypes: 13 ♂♂, 3 ♀♀, LF 11–13 mm, Chayu and Lower-Chayu, end July to mid August 2000.

The specific name is due to the similarity between the new species and *T. zuthus*.

10. *Celastrina oreas limingani* subspec. nov.

(Colour plate II, fig. 16)

Diagnosis

This new subspecies is distributed just between ssp. *baileyi* ELIOT & KAWAZOE, 1983 from Yigong, SE. Tibet (specimens from the type locality examined) and ssp. *yunnana* ELIOT & KAWAZOE, 1983 from NW. Yunnan (4 ♂♂ from Jizushan, N. Yunnan examined), but is not intermediate between them in features and can be easily distinguished from them as well as from all the other subspecies by the following combination of characters in the males:

- 1) On the upperside the ground colour is less purplish and brighter than in the other subspecies.
- 2) The hindwing upperside black marginal band is broader than in the other subspecies.
- 3) The discal spots on the underside of both wings are bigger and blacker, those on the hindwing are more rounded than in all the other subspecies.

There was no conspicuous difference found in the male genitalia among these subspecies.

Type data

Holotype ♂: LF 18 mm, Gamagou, below Yela Pass, south of Bangda, E. Tibet, 2900 m, July 2000.

Paratypes: 3 ♂♂, same data as holotype.

The name is after Mr. LI MING-AN, a friend of mine during my tour between Mangkang and Chayu.

11. *Albulina orbitulus demulaensis* subsp. nov.

(Colour plate III, fig. 19-right; colour plate IX, fig. 69)

Subspecific classification

In Bridges' catalogue of Lycaenidae, numerous names have been included into *A. orbitulus* (PRUNNER, 1798) from the Alps as subspecies or forms. However, after a survey of original descriptions and the recent revisional works, I have drawn the conclusion that only the following taxa are most probably good subspecies of *A. orbitulus*:

- 1) ssp. *orbitulus* from the Alps
- 2) ssp. *luxurians* (FORSTER, 1940) from NW. Yunnan (Lijiang)
- 3) ssp. *lobbichleri* FORSTER, 1961 from C. Nepal
- 4) ssp. *tatsienluica* (OBERTHÜR, 1910) from W. Sichuan (Ta-tsien-lu)
- 5) ssp. *major* (EVANS, 1915) from the Namjagbarwa area of SE. Tibet
- 6) ssp. *pheretimus* (STAUDINGER, 1892) from the Kentei area and the extreme Northeast of China
- 7) ssp. *sajana* (HEYNE, 1895) from Sajan Mts., Altai and Mongolia
- 8) ssp. *shanxiensis* MURAYAMA, 1983 from Shanxi Province (Wutai Shan) of N. China
- 9) ssp. *tyrone* (FORSTER, 1940) from Gansu
- 10) ssp. *qinlingensis* WANG, 1998 from W. Henan Province (Lingbao) and Qinling Mts.
- 11) ssp. *tibetana* D'ABRERA, 1993 from SC. Tibet (Sakithung).

The remaining taxa are listed and discussed as follows:

- 1) *pheretes* HOFFMANSEGG, 1804 is only a junior synonym of *A. orbitulus orbitulus* from Europe.
- 2) *sikkima* BATH, 1900 from Sikkim has been placed by BALINT & JOHNSON (1997) under the genus *Agriades*, closely resembling *A. janigena* (RILEY, 1932) and *A. morsheadi* (EVANS, 1922), its syntype has been illustrated in BALINT & JOHNSON (1997: 65–6, 67–6).
- 3) *tartarus* STAUDINGER, 1895 is a junior synonym of *Albulina orbona* (GRUM-GRSHIMAILLO, 1891) from Qinghai, which has a brownish upperside in males and reddish tornal spots, closely resembling *Albulina amphirrhoe* (OBERTHÜR, 1910) from Sichuan.
- 4) *amphirrhoe* OBERTHÜR, 1910 is an independent species of *Albulina* and sympatric with *Albulina orbitulus tatsienluica*, with brown upperside in males.
- 5) *arcaseia* FRUHSTORFER, 1916 originally from Kambajong, SC. Tibet is independent and more or less sympatric with *Albulina orbitulus tibetana*, *Albulina lehana asiatica* (ELWES, 1882) and *Albulina pharis* in areas around the Sikkim-Tibetan border, good photos can be found in D'ABRERA (1993: 497).
- 6) *armathea* FRUHSTORFER, 1916 from Chotan and Schahidulla (the extreme West of Kunlun Mts.) is much more closely related to *Albulina lehana* (MOORE, 1873) than to *Albulina orbitulus*.
- 7) *artenita* FRUHSTORFER, 1916 from Yarkend, Mus-tag-ata and Beik Hindukush, is more allied to *A. lehana* than to *A. orbitulus*.
- 8) *asiatica* from SC. Tibet clearly represents *A. lehana* from Ladak, not a subspecies of *A. orbitulus*.
- 9) *berezowskii* GRUM-GRSHIMAILLO, 1902 from Songpan, NW. Sichuan has nothing to do with *Albulina orbitulus*, however is somewhat similar to *Aricia lamasem* (OBERTHÜR, 1910) from the Ta-tsien-lu area in upperside features.
- 10) *janigena* RILEY, 1923 from SC. Tibet belongs to the genus *Agriades*.
- 11) *lehana* MOORE, 1873 from Ladak and also W. Tibet is independent from *Albulina orbitulus*, with conspicuous difference in either external features (smaller size, darker ground colour on both sides and more pointed wing-shape) or genital structures.

- 12) *maloyensis* RÜHL, 1893 from Europe is an aberration of *A. orbitulus orbitulus*.
 13) *orbitulinus* STAUDINGER, 1892 from Kentei, belongs to the genus *Agriades* and is sympatric with *Albulina orbitulus pheretimus*.
 14) *pharis* originally from SC. Tibet is independent from *A. orbitulus* and sympatric with *A. orbitulus tibetana*, *A. lehana asiatica* and *A. arcaseia* in SC. Tibet and nearly sympatric with *A. lehana lehana* in SW. Tibet, with the most pointed wing-shape, smaller size and a very much elongated hindwing disco-cellular spot.
 15) *dschagataicus* BANG-HAAS, 1915 from Chotan is a race of *Agriades pheretiades* (EVERSMANN, 1843).
 16) *philebus* FRUHSTORFER, 1915 from Kashgar, Xinjiang is a race of *Agriades pheretiades*.

It is rather clear that *Albulina orbitulus* is distributed from Europe through NW. Asia and Siberia to N. China and E. Tibet, as far as SC. Tibet and C. Nepal where it flies together with *Albulina lehana*, *A. pharis* and *A. arcaseia*, but it is entirely absent in the NW. Himalayas, the southern part of Central Asia and W. Tibet.

Diagnosis

All the Chinese subspecies have been examined and this new subspecies (ssp. *demulaensis*) is closer to ssp. *tatsienluica* (col. pl. III fig. 18-left; col. pl. IX, fig. 71) and ssp. *luxurians* (col. pl. III, fig. 18-right; col. pl. IX, fig. 70) in the same upperside shining blue ground colour without purplish shade at all, but can be distinguished from them by its smaller size, the upperside black marginal line being almost absent on both wings, or at least not well marked on the hindwing as in either *tatsienluica* or *luxurians*, the forewing underside black discal dots are reduced or obsolete and the hindwing underside's white spots are much smaller and reduced in number. This new subspecies differs from ssp. *major* simply by the much smaller size, from ssp. *dongdalaensis* (col. pl. III fig. 19-left; col. pl. IX, fig. 66), ssp. *litangensis* (col. pl. III, fig. 23-right; col. pl. IX, fig. 68), ssp. *tyrone* (col. pl. III, fig. 23-left; col. pl. IX, fig. 67), ssp. *phetimus* (= *sajana*, *shanxiensis*) and ssp. *qinlingensis* by the upperside ground colour not having any purplish shade and the underside markings being much more reduced. The remaining *lobbichleri* and *tibetana* are very easy to recognise: *lobbichleri* has very wide black marginal bands on the upperside of both wings, *tibetana* has a more brilliant upperside ground colour and the hindwing underside ground colour is much darker and in good contrast with the white spots.

Remarks

Albulina orbitulus is single brooded in all the localities of China, the examined specimens of ssp. *luxurians*, ssp. *tatsienluica*, ssp. *dongdalaensis*, ssp. *litangensis*, ssp. *tyrone* and ssp. *demulaensis* have been collected in the same season from similar altitude.

Type data

Holotype ♂: LF 14 mm.

Paratypes: 5 ♂♂, 4 ♀♀, Demula, Chayu area of Tibet, July 25th and August 12th 2000.

The subspecific name is due to the locality of the new subspecies.

12. *Albulina orbitulus dongdalaensis* subsp. nov.

(Colour plate III, fig. 19-left; colour plate IX, fig. 66)

Diagnosis

Similar to ssp. *litangensis*, ssp. *tyrone*, ssp. *phetimus* and ssp. *qinlingensis* in having the upperside ground colour shining purplish blue, but can be distinguished from all of them by the following combination of characters in the males:

- 1) The size is constantly much smaller than in all the above-mentioned subspecies.
- 2) The upperside black marginal line is as broad as in ssp. *phetimus* and ssp. *qinlingensis*, but thinner than in ssp. *litangensis* and ssp. *tyrone*.

3) The forewing underside's discal black spots are as big as in ssp. *litangensis*, but smaller than in ssp. *tyrone*, ssp. *pheretimus* and ssp. *qinlingensis*.

Remarks

The differences between ssp. *tyrone*, ssp. *pheretimus* and *qinlingensis* are as follows: ssp. *tyrone* just has the upperside black marginal bands very constantly wider than ssp. *pheretimus* and ssp. *qinlingensis*, otherwise it cannot be distinguished from ssp. *pheretimus*; ssp. *qinlingensis* has the underside ground colour remarkably darker than either *tyrone* or *pheretimus*, otherwise as in *pheretimus*.

Both ssp. *shanxiensis* from N. China (Shanxi) and ssp. *sajana* from Sajon Mts. cannot be distinguished from ssp. *pheretimus* from E. Siberia, and should be treated as synonyms of the latter.

Type data

Holotype ♂: LF 14 mm.

Paratypes: 4 ♂♂, 2 ♀♀, Dongdala, east of Zuogong, E. Tibet, July 23rd 2000.

The subspecific name is due to the type locality of the new subspecies.

13. *Albulina orbitulus litangensis* subsp. nov.

(Colour plate III, fig. 23-right; colour plate IX, fig. 68)

Diagnosis

Similar to ssp. *dongdalaensis*, ssp. *tyrone*, ssp. *pheretimus* and ssp. *qinlingensis* in the purplish shade of the upperside ground colour, but can be distinguished from them by the following combination of characters in the males:

1) The size is larger than in ssp. *dongdalaensis*.

2) The upperside black marginal band is as wide as in ssp. *tyrone* at least on the hindwing, conspicuously wider than in ssp. *dongdalaensis*, ssp. *pheretimus* and ssp. *qinlingensis* at least on the hindwing.

3) The forewing underside's discal black spots are smaller and less in number than in ssp. *tyrone*, ssp. *pheretimus* and ssp. *qinlingensis*.

4) The hindwing underside's white spots are smaller and less in number than in ssp. *tyrone*, ssp. *pheretimus* and ssp. *qinlingensis*.

This new subspecies can be easily distinguished from its closest distributed subspecies, *tatsienluica*, by the purplish shade of the upperside ground colour.

Type data

Holotype ♂: LF 17 mm.

Paratypes: 6 ♂♂, Litang, W. Sichuan, July 17th 2000.

The subspecific name is due to the type locality of the new subspecies.

14. *Lycaena ouang nujiangensis* subsp. nov.

(Colour plate III, fig. 20; colour plate IV, fig. 25)

Diagnosis

Hitherto only the nominotypical subspecies of *Lycaena ouang* (OBERTHÜR, 1891) (col. pl. III, fig. 24) has been described from Tsekou of NW. Yunnan in the Mekong valleys (Lancang valleys) and it is also known from Batang and Mangkang (specimens examined). The new subspecies from the Nujiang valleys (Gamagou and Chawalong) can be distinguished from the nominotypical subspecies by the following combination of characters:

Female

1) The upperside purplish blue colouring, which is clearly defined in the subbasal area of the forewing and the postdiscal and submarginal areas of the hindwing in ssp. *ouang*, is entirely absent.

2) The upperside red markings are more developed than in ssp. *ouang*, the forewing submarginal red spots are wider and more clearly defined in spaces 1a, 1b, 2 and 3, the hindwing submarginal red spots are wider and brighter.

Male

3) The upperside ground colour is less purplish and all red markings are wider.

Both male and female

4) The underside postdiscal white band is broadly margined with black on its outer side and followed by white scales just inside of the submarginal line, whereas in ssp. *ouang* it is not apparently margined with black on its outer side and not followed by white scales.

Type data

Holotype ♀: LF 18 mm, Gamagou (by the Nujiang River), July 24th 2000.

Paratypes: 3 ♀♀, same data as holotype; 1 ♂, Chawalong, Nujiang Valley, SE. Tibet, September 3rd 2000.

The subspecific name is after the Nujiang River which cuts across the type localities of the new subspecies.

15. *Satyrium xumini* spec. nov.

(figs 32, 33, 36; colour plate IV, figs. 26)

Diagnosis

This new species from Batang is very close to *Satyrium eximia* (FIXSEN, 1887) (figs 34, 35, 37) which is widely distributed in Amur, Mongolia, Korea, NE. China, N. China and W. China (Sichuan), but can be distinguished from the latter by the following combination of characters in the males:

- 1) The male brand at cell-end of the upperside forewing is slightly longer than in *S. eximia*.
- 2) The hindwing upperside spaces 1c and 2 bear reddish spots that are usually absent in *S. eximia*.
- 3) The underside discal lines are thinner and shining bluish, not pure white as in *S. eximia*.
- 4) Male genitalia (figs 32–37): because the difference among species of *Satyrium* is always very slight, the hand drawings of male genitalia cannot give a subjective reflection, therefore I have spread the pair of male valvae completely on the slide to take photos, without any part folded. To compare with the new species, six male specimens of *S. eximia* from Sichuan (Wasigou, at the east of Ta-tchien-lu) and N. China (Beijing and Qingdao) have been examined; the aedeagus of the new species is thinner than in *S. eximia* with the entrance of the ductus seminalis being much shorter than in *S. eximia*; the valvae of the new species have the caudal extension as long as in *S. eximia*, but have the bilobed configuration much shorter than in *S. eximia*.

Remarks

This new species is also similar to *S. lais* (LEECH, 1892) from Wasigou (Wa-ssu-kow) in rather small size, but can be distinguished at once from the latter by the absence of the forewing upperside red markings and the much thinner whitish submarginal lines. I do not know the male genitalia of *S. lais*.

Recently MURAYAMA (1992) described *S. neoeximia* from N. Yunnan (Dali), which was very doubtfully different from *S. eximia* and probably is a synonym of the latter. The new species here described can be distinguished from *S. neoeximia* as well as *S. eximia* by the hindwing upperside reddish spots in spaces 1c and 2 and the shining bluish discal lines on the underside. Moreover, according to MURAYAMA's illustrations of the male genitalia of both *S. eximia* and *S. neoeximia*, the bilobed configuration of the valvae is remarkably longer in *S. neoeximia* than in *S. eximia*, thus the new species can be distinguished from *S. neoeximia* also by the much shorter bilobed configuration of the valvae in male genitalia.

Most of the old species have their male genitalia not examined, but the new species here described can be simply distinguished by the external features at least.

In external features this new species is a little similar to the non-reddish form of *S. iyonis koiwayai* (INOMATA, 1989) and also to *S. v-album* (OBERTHÜR, 1886) on the underside, but it can be easily

distinguished from either of them by the much darker upperside ground colour, the presence of hind-wing upperside sub-tornal reddish markings in spaces 1c and 2, the shorter entrance of the ductus seminalis on the aedeagus, the shorter and thicker cornuti, the shorter bilobed configuration of the valvae, the longer caudal extension of the valvae and the less pointed tip of the valva (photos of male genitalia of *S. iyonis koiwayai* and *S. v-album* have been illustrated in INOMATA, 1989).

No revisional work has been published on the genus *Satyrium* until now. Besides the older taxa included in works by LEECH, SEITZ and D'ABRERA, there have been some more recent taxa described from China. In external features, as well as *S. eximia* does, the new species can be very easily distinguished from the more recently described *S. persimilis* (RILEY, 1939), *S. dejeani* (RILEY, 1939), *S. esakii* SHIROZU, 1941, *S. austrina* MURAYAMA, 1943, *S. iyonis* (OTA & KUSUNOKI, 1957), *S. iyonis harutai* (INOMATA, 1989), *S. siguniangshanicum* MURAYAMA, 1992, *S. minshanicum* MURAYAMA, 1992, *S. kongmingi* MURAYAMA, 1992, *S. pseudopruni* MURAYAMA, 1992, *S. volt* (SUGIYAMA, 1993), *S. redae* BOZANO, 1993 and *S. giacomazzoi* BOZANO, 1996 [= *S. austrina yoshikoeae* (KOIWAYA, 1996) junior synonym].

Type data

Holotype ♂: LF 16 mm, 50 km NE of Batang, Sichuan-Tibet border, July 19th 2000.

This new species is dedicated to XUMIN, one of my Tibetan friends who have helped me to cross the broken road east of Batang.

16. *Esakiozephyrus longicaudatus* spec. nov.

(figs 38, 39, 47; colour plate IV, fig. 27)

Diagnosis

In external features this new species is very similar to the members of the *E. bieti* (OBERTHÜR, 1886)-group which has been considered as an independent genus, *Iwaseozephyrus* FUJIOKA, 1994, but is very sharply different from all of them in either male genitalia or female genitalia. In external features it has a long tail as in *E. dohertyi* (DE NICEVILLE, 1888) and *E. zhengi* HUANG, 1998, conspicuously longer than in *E. bieti* (OBERTHÜR, 1886), *E. mandara* (DOHERTY, 1886) and *E. ackeryi* (FUJIOKA, 1994) **comb. nov.**, and has the very similar size and wing-pattern to *E. mandara irma* (EVANS, 1925) and *E. bieti takanamii* (HUANG, 2000). In genitalia (terminology following SHIROZU & YAMAMOTO, 1956: 333–338) the new species is easily distinguishable from all the known taxa (except *E. dohertyi* which has not been examined in genitalia) of the *E. bieti*-group (figs 40–45) by the following combination of characters:

1) Male genitalia (figs 38–45): in spread condition, the two branches of the uncus are much closer to each other than in all the other species; the two valvae have a much broader contact along the posterior margins; the posterior angle of the valva is acutely angled; the costal process of the ampulla is much more slender and longer; the distal process of the ampulla is much broader than in all the others and is parallel with the posterior margin of the valva; the aedeagus is more slender, with a suprazonal sheath twice as long as the subzonal sheath, very like that of *Esakiozephyrus icana* (MOORE, 1874), but not strongly bended ventrally at the middle.

2) Female genitalia (figs 47–49): the lamella antevaginalis is obsolete as well as in *Esakiozephyrus icana*, not developed as in the *E. bieti*-group; the lamella postvaginalis is fully developed as in *E. icana*, but different in shape and with an additional triangular fold just posterior to the ostium, without any twin small arm-like process at the inlet of ostium bursae which is only present as diagnostic character in the *E. bieti*-group; the ductus bursae is very similar to that of *E. icana*, but much thinner and longer than in the *E. bieti*-group; the spine of the signum is apparently broader than in the *E. bieti*-group.

Because all the members of the *E. bieti*-group are allopatric in nature, the new species cannot be conspecific with *E. dohertyi* from Kulu, NW. Himalayas, though the genitalia of *dohertyi* have not been examined until now.

Generic classification

FUJIOKA (1994) has erected the genus *Iwaseozephyrus* (genotype *E. mandara*) based upon the genital difference from *Esakiozephyrus* (genotype *E. icana*). However, since the discovery of *E. longicaudatus*, all the generic diagnostic characters mentioned by FUJIOKA cannot serve any longer because *E. longicaudatus* forms the transition between *E. icana* and *E. mandara* in both male and female genitalia. In external features, the new species is almost indistinguishable from the members of the *E. bieti*-group, quite different from *E. icana*; in male genitalia the new species agrees more with *E. icana* in the aedeagus and more with the *E. bieti*-group in the valva; whereas in female genitalia the new species agrees much more with *E. icana* nearly in all structures, sharply different from the *E. bieti*-group. Therefore there is no need to retain the genus *Iwaseozephyrus* FUJIOKA, 1994 (syn. nov. = *Esakiozephyrus* SHIROZU & YAMAMOTO, 1956) any longer.

Type data

Holotype ♂, LF 18 mm, 8 km south of Guyu, Chayu area of Tibet, 2900 m, August 11th 2000.

Paratypes: 3 ♂♂, 3 ♀♀, LF 17–18 mm, same data as holotype; 1 ♂, 20 km north of Chayu, 2400 m, August 17th 2000; 1 ♂, 1 ♀, Sangjiu, 3000 m, August 27th 2000.

The specific name is due to the long tails of the new species.

17. *Esakiozephyrus bieti mangkangensis* subspec. nov.

(fig. 45; colour plate IV, fig. 28)

Diagnosis

This new subspecies is easily distinguishable from the two previously known subspecies by the following combination of characters:

- 1) The size is conspicuously bigger than in ssp. *bieti* and ssp. *takanamii* (HUANG, 2000), the length of the forewing 20 mm against 17–19 mm in ssp. *takanamii* and 15–17 mm in ssp. *bieti*.
- 2) The black borders are remarkably broader at the tornus of the forewing and on the whole hindwing than in the other two.
- 3) The underside discal lines are gently and smoothly curved as in ssp. *bieti*, not angled as in ssp. *takanamii*, the submarginal red markings are thinly developed as in ssp. *bieti*, narrower and less conjoined than in ssp. *takanamii*.

There is no constant difference in male genitalia among these three subspecies.

Checklist of *E. bieti* looking-like taxa

The distribution of the known taxa of *E. bieti* looking-like taxa is as follows:

<i>E. ackeryi</i>	Shaanxi (Mts. Qinling)
<i>E. bieti bieti</i>	West Sichuan (Kangding (Tatsienlu), Omei, Yajiang)
<i>E. bieti takanamii</i>	NW. Yunnan (Lijiang)
<i>E. bieti mangkangensis</i>	E. Tibet (Mangkang)
<i>E. longicaudatus</i> spec. nov.	extreme SE. Tibet (Chayu)
<i>E. zhengi</i>	SE. Tibet (Metok, on south of the Great Himalaya)
<i>E. mandara major</i> HUANG, 1998	SE. Tibet (Pai, Linzhi, Milin)
<i>E. mandara irma</i>	Bhutan
<i>E. mandara mandara</i>	W. Himalayas (Kumaon), C. Nepal
<i>E. dohertyi</i>	NW. Himalayas (Kulu)

Type data

Holotype ♂: LF 20 mm, Wenquan of Mangkang, E. Tibet, 2800 m, July 21st 2000.

This new subspecies is named after its type locality.

18. *Teratozephyrus camurius chayuensis* subspec. nov.

(figs 22, 52; colour plate IV, fig. 29)

Specific classification

MURAYAMA (1986) described *camurius* as a new species of *Teratozephyrus* from Bhutan, however he did not discuss more on its specific rank. FUJIOKA (1994) downgraded *camurius* as a subspecies of *T. tsangkie* (OBERTHÜR, 1886) (figs 23, 51) based upon their very similar male and female genitalia and allopatric distribution. However, there are slight but very constant differences in both external features and female genitalia between *tsangkie* and *camurius*: *camurius* has the underside discal bands in both sexes constantly broader than in *tsangkie*, the female forewing upperside red spot in space 3 is widely separated from the red discocellular spot, and in the female genitalia the central process of the genital plate is constantly shorter and less deeply bifid than in *tsangkie*. Moreover, since the discovery of a new subspecies of *camurius* (female genitalia examined, agreeing with those of nominotypical *camurius*) in Chayu and a population of *tsangkie* (figs 24, 50; col. pl. IV, fig. 30) (female genitalia examined, agreeing with those of nominate *tsangkie* from Sichuan) in Chawalong which is no more than 90 km east of Chayu, in the viewpoint of zoogeography these two taxa should be treated as different species.

Diagnosis

This new subspecies from Chayu differs from the only known nominotypical *camurius* from Bhutan by the following combination of characters in the females:

- 1) The discocellular cell and the basal two third of space 1b on the forewing upperside are brilliant metallic blue, not dull brownish as in ssp. *camurius*.
- 2) The hindwing upperside space 2 bears metallic blue scales near the termen, which are absent in ssp. *camurius*.
- 3) The hindwing underside tornal red markings are much bigger than in ssp. *camurius*.

Remarks

There is no difference in female genitalia between the new subspecies and ssp. *camurius*. The new subspecies agrees with ssp. *camurius* also in the separated red markings on the forewing upperside and the broad white discal lines on the underside of both wings. My collecting days for this new subspecies were apparently too late, this was reflected by the fact that numerous female specimens had been seen and captured but no male had been encountered during my collecting.

Type data

Holotype ♀: LF 18.5 mm, 15 km north of Chayu and Chayu, Chayu area of Tibet, mid August 2000.

Paratypes: 21 ♀♀, LF 17–19 mm, same data as holotype.

This new subspecies is named after its type locality.

19. *Chrysozephyrus parakuromon* spec. nov.

(fig. 46; colour plate IV, figs. 31)

Diagnosis

Although only a female is known, I decide to describe this species as new because of its very special underside markings and female genitalia. In external features this new species only closely resembles *Chrysozephyrus kuromon* (SUGIYAMA, 1994 comb. nov.) which has been originally described from Sichuan as a species of *Teratozephyrus*. It can be distinguished from *C. kuromon* by the following combination of characters in the females:

- 1) On the upperside the ground colour of the basal and discal areas is much darker than in *C. kuromon*, the two red spots on the forewing are more widely separated from each other.
- 2) On the forewing underside the discal band is margined with a white line on its inner side, which is absent in *C. kuromon*.

3) On the hindwing underside the basal area inside of the subbasal white lines is not paler than the antediscal area outside of the subbasal lines.

4) Female genitalia (fig. 46): the genital plate is quite different in shape, shorter, broader and angled regularly, not egg-shaped as in *C. kuromon*; the portion anterior to the ostium is much longer, broader and more strongly sclerotized than in *C. kuromon*; the ductus bursae and the entrance of the bursa copulatrix are more heavily sclerotized than in *C. kuromon*. Just because of such conspicuous differences in the female genitalia I regard this new taxon as full species.

Remarks

FUJIOKA (1994) has illustrated both male and female genitalia of most taxa of *Teratozephyrus*, which are very much different from either *kuromon* or the new species described here. However, the similarity in male genitalia between *kuromon* and most species of *Chrysozephyrus*, the feature of the signum and the lacking of the additional ventral pouch of the bursa copulatrix in female genitalia of both *kuromon* and *parakuromon* prove them members of the genus *Chrysozephyrus*.

With regard to the underside markings, both *C. kuromon* and *C. parakuromon* are somewhat similar to *C. desgodinsi* (OBERTHÜR, 1886) (with ssp. *dumoides* TYTLER, 1915) in their very broad and dark forewing discal band, but can be easily distinguished from the latter as well as all the other species and subspecies of *Chrysozephyrus* by the hindwing subbasal line being more in a smooth line with the discocellular bar, not placed very much inside of the discocellular bar as in the other species of *Chrysozephyrus*. Moreover, they differ from *C. desgodinsi* and *C. desgodinsi dumoides* in the females by having the forewing upperside two reddish spots well separated. The male of *C. kuromon* is sharply different from all the other known species of *Chrysozephyrus*, recalling species of *Teratozephyrus*; the male of *C. parakuromon* is unknown at present, but maybe closely resembles *C. kuromon*.

Type data

Holotype ♀: LF 21 mm, on path between Chawalong and Quzhu, Nujiang Valley, SE. Tibet, 2300 m, September 3rd 2000.

The specific name is due to the similarity between the new species and *C. kuromon*.

20. *Spindasis zhengweilie chayuensis* subsp. nov.

(Colour plate IV, fig. 32; colour plate V, fig. 33)

Specific classification

Spindasis zhengweilie has been described from Metok as an independent species. Because its lowest subbasal spot on the hindwing underside continues to the wing-base, it is only similar to *Spindasis nipalicus* (MOORE, 1884), *Spindasis nipalicus sani* (DE NICEVILLE, 1889) (= *rukma* DE NICEVILLE, 1889), *Spindasis evansii* (TYTLER, 1915) and *Spindasis rukmini* (DE NICEVILLE, 1889), but differs from all of them in having the forewings of both sexes (the female is recorded here for the first time) conspicuously broader in shape with the tornus rectangular or acutely angled, not obtusely angled as in all the others. It differs from *Spindasis nipalicus* also in having no trace of reddish markings on the forewing upperside in both sexes. Moreover, I have noticed that CANTLIE (1963) had examined the male genitalia of all subspecies of *S. nipalicus* and clearly pointed out that there had been two thread-like points emerging from the bottom of the juxta in the centre (whereas in *zhengweilie* the bottom of the juxta is rounded, without such an extension). It was a pity that CANTLIE did not examine *S. rukmini* and *S. evansii*, but the constant external difference leaves no doubt that *S. zhengweilie* is independent from either of them.

From Mishimi hills, the southern neighboring area of Chayu, SOUTH (1913) has recorded both *Spindasis syama* and *S. syama mishmisensis* (as var. nov. by SOUTH). However, his record of *S. syama* is probably a misidentification of *S. zhengweilie chayuensis* and his *S. syama mishmisensis* represents a species independent from either *S. syama* or *S. zhengweilie*. According to his rough description, *mishmisensis* at least has a purplish blue forewing upperside in the male with greenish reflection in certain lights (whereas males of *S. zhengweilie chayuensis* have no greenish shade in all kinds of views), and

the female forewing upperside is fuliginous, without trace of purplish blue (whereas the females of *S. zhengweilie chayuensis* have an extensive pale blue discal area).

Diagnosis

This new subspecies from Chayu can be distinguished at once from the nominotypical subspecies from Metok by the following combination of characters in the males:

- 1) The size is much larger, length of forewing 18 mm against 14 mm (not 17 mm which has been a mistake in the publication of the original description) in ssp. *zhengweilie*.
- 2) On the forewing underside the second band (in order from base to termen) is nearer to the fourth band than in ssp. *zhengweilie*.
- 3) The forewing underside discal band reaches vein 1b, whereas in ssp. *zhengweilie* it ends in the middle between vein 1b and vein 2.
- 4) The forewing upperside discal blue area is powdered with white scales which are unseen in ssp. *zhengweilie*.

There are only very slight differences in male genitalia between the two subspecies.

Type data

Holotype ♂: LF 18 mm, Lower-Chayu, Chayu area of Tibet, July 26th 2000.

Paratypes: 8 ♂♂, 5 ♀♀, Lower-Chayu and Ba-an-tang, end of July to early August 2000.

This new subspecies is named after its type locality.

21. *Rapala micans haniae* subsp. nov.

(figs 25, 54, 58; colour plate IX, fig. 75)

Specific classification

The new species described here has been misidentified as *R. nissa* and is clearly a member of the *R. nissa*-complex, among which at least three species have been previously confused and included. I list these three species as follows, based upon the examination of male genitalia. It is interesting that all of them have no difference in underside markings.

- 1) *R. nissa* (KOLLAR, [1844]) originally from N. India (W. Himalayas), with ssp. *ranta* SWINHOE, 1897 (figs 28, 55, 59; col. pl. IX, fig. 76) (? = *tacola* FRUHSTORFER, [1914] from Assam) from Sikkim, Assam, N. Burma and SE. Tibet (Metok, Chayu), ssp. *nissoides* SWINHOE, 1915 always with a large red spot on the upperside from Shan States of Burma, ssp. *pahangana* PENDLEBURY & CORBET, 1933 from Malay (Pahang) and ssp. *palamera* FRUHSTORFER, [1912] from NE. Sumatra.

The upperside ground colour is more purplish and less brilliant than in *R. micans*, more or less with an indication of red markings on the forewing. In male genitalia (specimens of ssp. *ranta* from Chayu, SE. Tibet examined) (figs 28, 55, 59) the cornuti are shaped as a pair of sharp claws, when spread completely the conjoined valvae is abruptly broadened from the base to the middle, the cleft of the valvae is as deep as in *R. micans*.

This species is restricted to the west of China and Indo-China, where it is replaced by *R. micans*.

- 2) *R. micans* (BREMER & GREY, 1853) (= *cismona* SEITZ, 1927 from Qingdao) stat. rev. originally from N. China (figs 27, 53, 57; col. pl. IX, fig. 74), with ssp. *hirayamana* MATSUMURA, 1926 (= *mushana* MATSUMURA, 1935) from Taiwan, and a new subspecies described here from Yunnan-Vietnam border (figs 25, 54, 58; col. pl. IX, fig. 75).

The upperside ground colour is more bluish and less purplish, more or less with an indication of red markings on the forewing. In male genitalia (figs 25, 27, 53, 54, 57, 58), the cornuti are two flat plates, the left one broad and the right one narrow, the conjoined valvae is nearly even in width around the middle portion, the cleft of the valvae is as deep as in *R. nissa*.

The name, *micans*, which should be used for a Northern Chinese taxon allied to *R. nissa*, had been wrongly used for *Rapala caerulea* (BREMER & GREY, 1853) for a long time until RILEY (1939) pointed out this mistake and gave justice to it.

3) *R. subpurpurea* LEECH, 1890 (figs 26, 56, 60) originally from W. China (Sichuan, Guizhou), with ssp. *bifida* CANTLIE, 1959 from Sadon, NE. Burma. This species is proved to be sympatric with *R. micans* in Sichuan.

The upperside ground colour is darker and more uniformly covered in dull indigo sheen than in *R. nissa* and *R. micans*, without any indication of a red spot. In male genitalia (figs 26, 56, 60), the aedeagus is longer and much thicker at the tip than in *R. nissa* and *R. micans*, the cleft of the valvae is deeper than in *R. nissa* and *R. micans*, almost extended to half way down the valvae.

Some specimens previously identified as *R. nissa* from Sichuan belong to this species, I have examined two males from Qing-cheng-shan, Sichuan, two other males from Qing-cheng-shan have been perfectly illustrated as *R. nissa* by KOIWAYA (1989: 27, plate 19, figs 103, 104, left two).

In China and the Himalayas, there are the following species very much allied to the *R. nissa*-complex, but they are all different in external features (only *R. takasagonis* and *R. rosacea* have male genitalia examined by previous students and discussed in literature).

R. takasagonis MATSUMURA, 1929 from Taiwan, with the vinculum of the male genitalia much shorter than in the *R. nissa*-complex.

R. rectivitta (MOORE, 1879) from Sikkim and Burma, with shot brilliant deep blue ground colour on the upperside.

R. rosacea (DE NICEVILLE, 1888) from Sikkim and Assam, with the underside more reddish and the cleft of the male valvae deeper than in the *R. nissa*-complex.

R. hinomaru FUJIOKA, 1970 from E. Nepal, very similar to *R. takasagonis*, only a female known.

The names *maculata* SEITZ, [1908], *nebulifer* SEITZ, [1908], *cismona* SEITZ, 1927, *formosanella* MATSUMURA, 1929 are all infra-subspecific names; the name *formosana* MATSUMURA is a junior homonym; the name *betuloides* (BLANCHARD, 1871) belongs to *R. caerulea*. I do not know whether *Rapala nissa odosia* (FRUHSTORFER, 1912) from W. Java belongs to *R. nissa*.

Diagnosis

This new subspecies of *R. micans* from the S. Yunnan-Vietnam border can be distinguished from ssp. *micans* and ssp. *hirayamana* by the following combination of characters:

1) The upperside ground colour has a strong greenish reflection and appears less bluish than in either *micans* or *hirayamana*.

2) Male genitalia: when spread completely the conjoined valvae is shorter and broader with the cleft shorter than in either *micans* or *hirayamana*.

This new taxon clearly belongs to *R. micans* more than to *R. nissa* and *R. subpurpurea* in the structure of aedeagus, cornuti and shape of valvae.

Type data

Holotype ♂: LF 15.5 mm. Hekou, S. Yunnan, near Vietnam-Chinese frontier, August 1992.

The subspecific name is after the tribe of the Hani of S. Yunnan.

Riodinidae

22. *Abisara chelina duanhuii* subsp. nov.

(fig. 61; colour plate V, fig. 34)

Specific classification

The taxon *chelina* (FRUHSTORFER, [1904]) from S. Burma, Thailand, Indo-China, South China and the Malaya Peninsula has been originally described under *Abisara neophron* (HEWITSON, [1861]) (col. pl. V, fig. 35) from Assam and SE. Tibet (Metok). However after an investigation of the male genitalia, *chelina* (fig. 61) should be considered as an independent species from *A. neophron* (fig. 62), with the uncus more slender and more pointed at the tip in lateral view and with the valva bigger and biramous. The taxon *neophronides* FRUHSTORFER, [1914] from Sikkim and Nepal just being of smaller

size than *neophron*, should be considered as a good subspecies of the latter. In external features, *A. chelina* has a broader white discal band on the forewing and a paler and less reddish ground colour on the underside than *A. neophron*. The remaining taxon *gratius* FRUHSTORFER, 1912 from Karens (Burma) has not been examined, I am not sure whether it belongs to *A. neophron* or *A. chelina*.

Diagnosis

This new subspecies from the Nujiang Valley can be distinguished from ssp. *chelina* by the following combination of characters in both male and female:

- 1) The forewing termen is more rounded and apparently convex at veins 4 and 5.
- 2) The forewing discal white band is straighter in shape, only curved towards the wing base at the tornus, whereas in ssp. *chelina* it is somewhat sinuous, with the upper end curved towards the apex.
- 3) The forewing discal white band is broader in spaces 2 and 3 than in ssp. *chelina*.

This new subspecies can be distinguished from taxon *gratius* simply by the upper end of the forewing discal white band being constricted.

Type data

Holotype ♂: LF 24 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet, September 5th 2000.

Paratypes: 1 ♂, 1 ♀ (LF 26 mm), same data as holotype.

This new subspecies is named after Mr. DUAN HUI, a friend of the tribe of Bai married with a Tibetan girl and living in Longpo village, who helped me very kindly in offering food during my marching down along the Nu-jiang River.

Nymphalidae

23. *Neptis sangangi* spec. nov.

(figs 66, 69; colour plate V, fig. 36)

Diagnosis

This new species is a member of the *Neptis hylas* (LINNAEUS, 1758)-group (sensu ELIOT, 1969) and is very close to *N. yerburii* BUTLER, 1886, *N. hylas* and *N. sappho* (PALLAS, 1771), but can be easily distinguished from all subspecies of them in specific level by the following combination of characters:

- 1) The hindwing vein 8 is conspicuously longer than in *N. yerburii*, *N. hylas* and *N. sappho*, the hindwing costa is evenly curved, not angled in the middle as in the other species. This is the most reliable and important diagnostic character.
- 2) The forewing upperside has indications of a dark line across the cell close to the discocellular bar as in *N. hylas* and *N. sappho*, whereas in *N. yerburii* it has no such indication.
- 3) On the hindwing the spots of the postdiscal band have their inner edge straight as in *N. yerburii*, not rounded as in *N. hylas* and *N. sappho*.
- 4) The hindwing antediscal and postdiscal white bands are nearly of the same width or only slightly different in width, whereas in all the other species the postdiscal band is always much narrower than the antediscal band.

5) In male genitalia (figs 66–71), the valva is longer and remarkably more bended at the dorsal margin than in all the other three species, with the apical hook being much thicker at the base than in all the others.

Remarks

ФУЛОКА (1970) described *Neptis tamur* from E. Nepal, which however could not be separated from *N. yerburii* soundly. According to ФУЛОКА's description and illustration of the holotype and male genitalia, *N. tamur* may be a synonym of *N. yerburii pandoces* ELIOT, 1969 (TL: Sikkim). The new species can be distinguished from *N. tamur* as well as from *N. yerburii* by the hindwing vein 8 being conspicuously longer and the valva being remarkably more bent at the dorsal margin with the apical hook being much thicker at the base.

The very little known *Neptis choui* YUAN & WANG, 1994 from Shaanxi was based upon a female and is very close to the members of the *N. hylas*-group, fortunately the males had been discovered and examined in male genitalia by WANG, NIU & CHEN (1998: 123) and proved to be a member of the *Neptis nata* MOORE, 1857-group (sensu ELIOT, 1969), having nothing to do with the new species described here.

In Chayu, this new species was observed flying together with *N. mahendra xizangensis* WANG & WANG, 1994, *N. soma shania* EVANS, 1924 and *N. sappho astola* MOORE, 1872. From the more eastern neighbouring Chawalong area, *Neptis soma soma*, *N. sappho astola* and *N. hylas kamarupa* MOORE, 1874 (fig. 71) are known. From the western Namjagbarwa area, *Neptis soma soma*, *N. mahendra xizangensis*, *N. sappho astola*, *N. clinia susruta* MOORE, 1872 (fig. 68) and *N. yerburii pandoces* ELIOT, 1969 (fig. 70) are known.

My collecting days for this new species were apparently too late and all the specimens captured have been worn. Therefore, I cannot give a description of the ciliae for this new species.

Type data

Holotype ♂: 20 km north of Chayu, Chayu area of Tibet, mid August 2000.

Paratypes: 8 ♂♂, 13 ♀♀, same data as holotype.

The specific name is after the Sangang Qu, the eastern tributary of the Chayu River, which cuts across the type locality of the new species.

24. *Neptis pseudonamba spec. nov.*

(fig. 63; colour plate V, fig. 37)

Diagnosis

This new species is a member of the *Neptis ananta* MOORE, 1857-group and close to the *N. ananta*-complex consisting of *N. ananta* and *N. namba* TYTLER, 1915, but can be distinguished from all the known subspecies of these two species in specific level by the following combination of characters:

- 1) The hindwing upperside has no indication of a yellowish postdiscal band which is fully developed and clearly defined in both *N. ananta* and *N. namba*.
- 2) All the yellowish bands on the upperside and the paler bands on the underside are conspicuously narrower than in all the known subspecies of *N. ananta* and *N. namba*.
- 3) Male genitalia (figs 63–65): the terminal half of the ventral margin of the ampulla is convex, whereas in all known subspecies of *N. ananta* and *N. namba* it is invariably concave (this is the most important and reliable diagnostic character). The inner process near the dorsal margin of the harpe is stronger than in most of the known subspecies of *N. ananta* and *N. namba*.

Remarks

In the neighboring area of the type locality of the new species, the following taxa have been recorded: *N. namba namba* TYTLER, 1915 (fig. 64) (misidentified as *N. ananta ochracea* EVANS, 1924 by me in my previous report) flying in Assam, Sikkim, Burma and the Namjagbarwa area of Tibet, *N. namba leechi* ELIOT, 1969 flying in Sichuan, *N. ananta chinensis* LEECH, 1892 (fig. 65) flying in west Sichuan, *N. ananta lucida* LEE, 1962 (judging from external features and the male genitalia of the holotype, *lucida* is not synonymic with *N. namba leechi* as stated by MURAYAMA, moreover *lucida* cannot be applied to the population of *N. ananta* from NW. Yunnan as ELIOT thought, in fact *lucida* is undoubtedly a very close relative of *N. ananta chinensis*) from the S. Yunnan-N. Vietnam border (Hekou), *N. ananta ochracea* EVANS, 1924 from Karens, Assam and Sikkim. However the new species described here does not show any intermediate characters between them. Besides studying ELIOT's illustrations of all taxa of *namba* and *ananta*, I have examined all the Chinese and Tibetan subspecies of these two old species in male genitalia to recognise the new species.

The ciliae of *N. pseudonamba* are mostly brown on both sides of the forewing, obscurely and narrowly chequered with paler scales in spaces 1b and 4–8, nearly uniform brown and not chequered on both sides of the hindwing.

Type data

Holotype ♂: , Tiyu, Chayu area of Tibet, 2400 m, August 3rd 2000.

The specific name refers to the similarity between the new species and *N. namba*.

Review of the *Euthalia duda*-group (sensu KOIWAYA, 1996: 242)

Before describing two new subspecies of *Euthalia alpherakyi* OBERTHÜR, 1907, a discussion on the whole *Euthalia duda* STAUDINGER, 1886-group is necessary. Based upon the analysis of illustrations of the type specimens or typical specimens in literature and examination of recently taken specimens, with the help of H. SUGIYAMA, I draw the following provisional conclusion. It should be noted that it was H. SUGIYAMA, who had helped me in offering many useful photos of his extensive collection on this group and firstly pointed out the importance of the forewing discal spots in spaces 5 and 6 and gave the better combinations of some difficult taxa.

In the *Euthalia duda*-group, the *Euthalia undosa* FRUHSTORFER, 1906-*melli* YOKOCHI, 1997-*ruckettsi* HALL, 1930-complex can be immediately distinguished from all the others by the twisted tip of the male valva, thus I mainly treat the remaining taxa.

All the following taxa in the key have photos of type material and typical specimens published in literature and male genitalia of typical specimens examined, except for *Euthalia duda* STAUDINGER, 1886 from Central Himalaya (Nepal) and *E. duda amplifascia* TYTLER, 1940 from NE. Burma.

Key to most taxa of the *E. duda*-group

- 1 (2a) Male valva much broader and shorter in shape, with well-developed teeth at tip (in both sexes the forewing discal spots in spaces 5 and 6 are of the same length)
 - *Euthalia thibetana* (POUJADE, 1885)
 - a. Discal bands broader on both wings, especially on hindwing.
 - ... *E. thibetana yunnana* OBERTHÜR, 1907, TL: Tsekou (NW. Yunnan), photo of syntype can be found in MORISHITA (1992: 3-2); hand-drawing of male genitalia can be found in KOIWAYA (1996: 243-1358 (= *E. neoterica* LEE, 1985, TL: Binchuan of N. Yunnan, photos of holotype and male genitalia provided in original description; I follow SUGIYAMA to regard *neoterica* as a synonym of *yunnana* because of their identical male genitalia and external diagnostic features).
 - b. Discal bands narrower on both wings.
 - *E. thibetana thibetana*, TL: Moupin of Sichuan, photos of typical specimens can be found in MORISHITA (1992: 3-1 male only) and D'ABRERA (199X: 359 male only).
- 2a (1) Male valva narrower and longer, with apical teeth weak and faint.
- 2 (3a) Male valva apparently shorter. (For both sexes forewing discal spot in space 5 slightly longer than that in 6.)
 - *E. duda sakota* FRUHSTORFER, 1928 TL: Tsekou (NW. Yunnan); holotype is figured in OBERTHÜR (1912) which has been reproduced in SEITZ (1932: 12a); photos of typical specimen can be found in D'ABRERA (1993: 359); hand-drawing of male genitalia can be found in Koiwaya (1996: 243-1356); here I publish a photo of the male valva (fig. 77).
- 3a (2) Male valva apparently longer.
- 3b (5a) For both sexes forewing discal spots in spaces 5 and 6 of the same length or slightly different in length.
 - 3 (4) Both male and female hindwing termen more rounded, especially more convex at vein 4, underside ground colour paler greenish, forewing spot in space 5 as long as spot in 6.
 - ... *E. kameii* KOIWAYA, 1996 TL: Zhouzhi (Shaanxi); holotype and male genitalia illustrated in the original description.
- 4 (3) Both male and female hindwing termen less convex at vein 4, underside deeper green, forewing spot in space 5 slightly longer than spot in 6.
 - ... *E. aristides* OBERTHÜR, 1907 TL: Tientsuen (Tianquan) in Sichuan; photos of a syntype can be found in MORISHITA (1992: 8-8 lower half); correct photos of typical specimens

can be found in D'ABRERA (1993: 360 *aristides* male only) and in KOIWAYA (1996: 172–1041); hand-drawing of the male genitalia provided by KOIWAYA (1996: 243–1355).

5a (3b) In both sexes the forewing discal spot in spaces 5 is conspicuously longer than spot in 6.

5 (6a) Both male and female bands remote from the termen and nearer to the wing-base, with hindwing band strongly curved.

..... *E. formosana* FRUHSTORFER, 1908, TL: Taiwan; typical specimens and male genitalia illustrated in SHIROZU (1960).

6a(5) both male and female bands nearer to the termen, with the hindwing band more or less straight.

6 (7) Male: upperside forewing discal spot in space 3 not overlapping spot in 4, spot in 3 nearer to the base of space 3, all bands pure white in colour, male valva slightly longer and broader.

... *E. tsangpoi* HUANG, 1999, TL: Metok (SE. Tibet); holotype and male genitalia have been illustrated in the original description, here I add a photo of the male valva (fig. 76).

7 (6) Male: upperside forewing spot in space 3 more or less overlapping spot in 4, spot in 3 not near the base of space 3, all bands more or less yellowish on forewing, male valva slightly narrower.

..... *E. alpherakyi* OBERTHÜR, 1907.

a. Both male and female discal bands narrower and less clearly defined than in *monbeigi*, male bands often more yellowish in colour, female discal spot in space 1b clearly defined on its inner side.

... *E. alpherakyi alpherakyi* TL: Tianquan (Sichuan); photos of a syntype can be found in MORISHITA (1992: 8–8 upper half) (= *E. insulae continentalis* KOIWAYA, 1996, TL: Wuyishan (Fujian); holotype and male genitalia illustrated in the original description).

b. Both male and female discal bands broader and more clearly defined than in *alpherakyi*, male bands often more whitish in colour, female discal spot in space 1b clearly defined on its both inner and outer sides.

... *E. alpherakyi monbeigi* OBERTHÜR, 1907, TL: Tsekou (NW. Yunnan); syntype figured in OBERTHÜR (1912) and reproduced in KOIWAYA (1996: 245–1364) (= *E. undosa monbeigi* OBERTHÜR, 1907; = *E. insulae yunnanica* KOIWAYA, 1996, TL: Zhongdian (NW. Yunnan); holotype and male genitalia illustrated in the original description).

c. Both male and female bands as broad as in *alpherakyi* but hindwing bands nearer to wing-base than in *alpherakyi*, forewing termen more straight and less concaved than in *alpherakyi*, female discal spot in space 1b clearly defined on its inner side.

..... *E. alpherakyi insulae* HALL, 1930, TL: Taiwan; typical specimen and male genitalia illustrated in SHIROZU (1960).

d. Both male and female discal bands as broad as in *monbeigi* with forewing spot in space 2 more oblique than in *monbeigi*, female discal spot in space 1b reduced and ill-defined on both its inner and outer sides.

..... *E. alpherakyi chayuensis* subsp. nov. (fig. 75; col. pl. V, fig. 38).

e. Male unknown at present; female: forewing apex more pointed than in all other subspecies, discal band very much narrower than in all other subspecies, with forewing spot in space 2 oblique, discal spot in space 1b reduced and ill-defined on both its inner and outer sides.

..... *E. alpherakyi nujiangensis* subsp. nov. (col. pl. V, fig. 39).

Remarks

Only *Euthalia duda duda* and *Euthalia duda amplifascia* are not treated in the above key because these two have their genitalia not examined until now. *Euthalia duda duda* has been correctly illustrated by MORISHITA (1989: 7-fig. 5) and HUANG (1999: 653–4), unfortunately no specimen has been available to examine its male genitalia; it is characterized in external features by the discal bands of both wings being pure white in colour in the males (as in *E. tsangpoi*, but different from all the others) and the forewing spot in space 5 being as long as the spot in space 6 (as in *E. thibetana* and *E. kameii*, but different from all the others). *E. duda sakota* is probably an independent species from *E. duda* because *sakota* has the forewing discal spot in space 5 slightly longer than that in space 6 and all bands

sometimes are yellowish in colour, whereas *duda* has the forewing discal spots in spaces 5 and 6 of the same length and all the bands are pure white in colour. After an examination of a good number of specimens in this group, following H. SUGIYAMA, I incline to regard the comparative length of forewing discal spots in spaces 5 and 6 as specific key character.

Another taxon, *Euthalia duda amplifascia* from NE. Burma, said to be much broader in both wings' discal bands than *E. duda duda* and closely resembling *E. durga* (MOORE, 1857), has just been illustrated by YOKOCHI (2000: 38, fig. 47). This taxon has the forewing spot in space 5 as long as the spot in space 6 and the spot in space 4 longer than in spaces 5 and 6, therefore different from *E. alpherakyi*, *Euthalia tsangpoi* and *Euthalia duda sakota*. It is most probably an independent species from *E. duda* of the Himalayas.

25. *Euthalia alpherakyi chayuensis* subspec. nov.
(fig. 75; colour plate V, fig. 38)

Diagnosis

As stated in the key above, this new subspecies is very close to ssp. *monbeigi* from NW. Yunnan, but can be distinguished by the more oblique forewing spot in space 2 in both sexes and the ill-defined forewing spot in space 1b in the female. It should be noted that eight females of ssp. *chayuensis* have been captured and all of them are very constant in that character. This new subspecies can be distinguished from *Euthalia duda duda* by the forewing discal spot in space 5 being longer than that in space 6, from *Euthalia duda sakota* by the male valva being remarkably longer, from *Euthalia duda amplifascia* by the forewing discal spot in space 5 being longer than that in space 6 and the discal bands not so broad as in *E. durga*, from *Euthalia tsangpoi* by the male valva being narrower and shorter and the upperside forewing spot in space 3 overlapping the spot in space 4. Because of its shape of the male valva and the appearance of the forewing discal spots in spaces 5 and 6, I regard this new taxon as a subspecies of *E. alpherakyi* provisionally.

Type data

Holotype ♀: LF 43 mm, 30 km north of Chayu, Chayu area of Tibet, 2300 m, mid August 2000.

Paratypes: 2 ♂♂, 7 ♀♀, same data as holotype.

This new subspecies is named after its type locality.

26. *Euthalia alpherakyi nujiangensis* subspec. nov.
(Colour plate V, fig. 39)

Diagnosis

Although there is only a single female known, I do not hesitate to describe it as new because it is very characterized by its much narrower bands on both wings and a very much pointed forewing apex. It is much closer to *E. alpherakyi chayuensis* than all the other taxa in this group because of the same appearance of the forewing discal spots in spaces 5 and 6 and the ill-defined upperside forewing spot in space 1b. Moreover, this new taxon inhabiting the Nujiang Valley is well isolated from the neighbouring taxa of the group in geography by the Poshulaling Mts. and Heduan Shan Mts.

Type data

Holotype ♀: LF 41 mm, Genong, Nujiang Valley, SE. Tibet, September 4th 2000.

This new subspecies is named after the Nujiang River which cuts across the type locality of the new subspecies.

27. *Euthalia nara chayuana* subsp. nov.

(Colour plate V, fig. 40)

Diagnosis

This new subspecies is very close to ssp. *colinsmithi* HUANG, 1999 from Metok of SE. Tibet in upperside ground colour, but can be easily distinguished from the latter by the following combination of characters in the males:

- 1) The hindwing upperside costal yellow patch is restricted above space 5, divided by the greenish ground colour into two parts in space 6 and without a narrow yellowish discal line down to spaces 2 and 3, whereas in ssp. *colinsmithi* it enters space 5 and extends as a very narrow band into spaces 2 and 3.
- 2) The hindwing underside discal spots are absent in spaces 2–4, whereas in ssp. *colinsmithi* they are present in spaces 2–4.
- 3) The forewing underside discal spot in space 2 is conspicuously smaller than in ssp. *colinsmithi*.

Remarks

In China three taxa which have been originally described under *Euthalia nara* have been observed flying together, viz. *omeia* LEECH, 1891, *pacifica* MELL, 1934 and *bunzoi* SUGIYAMA, 1996. KOIWAYA (1996) has raised all of them to full species rank based upon the external features of both sexes and their sympatric fact. However there has been no study on the early stages undertaken until now. Here I follow KOIWAYA to regard these Chinese taxa as independent species from *E. nara*. The remaining subspecies of *E. nara* can be listed as follows (the characters referring to males only):

Ssp. *nara* (MOORE, 1859) originally from N. India, also known from Sikkim, Nepal, N. Assam and N. Burma (Kachin state), upperside ground colour much more reddish than in ssp. *shania* EVANS, 1924, ssp. *colinsmithi* and ssp. *chayuana*, with the discal line on both sides of the hindwing present in spaces 2 and 3.

Ssp. *nagaensis* TYTLER, 1940 from Naga Hills (East Assam, near Burma), upperside ground colour as reddish as in ssp. *nara*, upperside hindwing costal yellow patch more extensive than in ssp. *nara* and ssp. *chayuana*.

Ssp. *kalawrica* TYTLER, 1940 from Kalaw, North part of South Shan States of Burma, upperside as reddish as in ssp. *nara*, upperside hindwing costal yellow patch smaller than in all the other subspecies and entirely divided into two parts.

Ssp. *shania* EVANS, 1924 from Loimwe, South part of South Shan States of Burma, also known from N. Thailand and S. Yunnan, upperside ground colour similar to ssp. *colinsmithi* and ssp. *chayuana*, but much more brilliant and shining than in ssp. *colinsmithi*, upperside hindwing costal yellow patch as big as in ssp. *colinsmithi*.

Type data

Holotype ♂: LF 33 mm, Tiyu (between lower-Chayu and upper-Chayu), Chayu area of Tibet, 2300 m, August 3rd 2000.

Paratypes: 3 ♂♂, same data as holotype.

This new subspecies is named after its type locality.

28. *Limenitis populi batangensis* subsp. nov.

(Colour plate VI, fig. 42-left)

Diagnosis

This new subspecies is very special in upperside ground colour. From the whole Chinese area, the following subspecies of *L. populi* (LINNAEUS, 1758) have been previously known: ssp. *ussuriensis* STAUDINGER, 1887 from NE. China, ssp. *fruhstorferi* KRULIKOWSKY, 1909 (= ssp. *halasiensis* HUANG & MURAYAMA, 1992, TL: Halasi of Altai, Xinjiang) from Xinjiang, ssp. *szechwanica* MURAYAMA, 1981 (col. pl. VI, fig.

42-right) from Sichuan (at the East of Kangding), Shaanxi and Henan. The new subspecies from Batang can be immediately distinguished from all of them by the following combination of characters:

- 1) The upperside ground colour is greenish blue, with a strong iron tinge, but without any reddish brown colouring, whereas in all the other subspecies it is basically reddish brown in ground colour.
- 2) Both wings' white bands are fully developed as in both ssp. *ussuriensis* and *fruhstorferi*, whereas in ssp. *szechwanica* they are nearly absent.

Remarks

Concerning distribution, the new subspecies is to the West and Southwest of ssp. *szechwanica* and very close to the latter, but the sharp difference in external features makes no difficulty to distinguish them from each other.

Type data

Holotype ♀: LF 39 mm, east of Batang, Sichuan-Tibet border, 2800 m, July 19th 2000.

Paratypes: 2 ♀♀, same data as holotype.

This new subspecies is named after its type locality.

29. *Fabriciana adippe chayuensis* subsp. nov.

(Colour plate VI, figs 43, 47)

Diagnosis

This new subspecies is distributed to the West of ssp. *taliana* REUSS, 1922, but very clearly more similar in external features to the Japanese subspecies, *pallascens* (BUTLER, 1873) than to the Chinese ssp. *taliana*, ssp. *ornatissima* (LEECH, 1892) (= *leechi* WATKINS, 1924, syntypes of both *ornatissima* and *leechi* examined) and ssp. *vorax* (BUTLER, 1871). It can be distinguished from all these previously known subspecies by the following combination of characters:

- 1) The male forewing bands are much thinner and shorter than in all the other subspecies, the one on vein 3 nearly absent and the one on vein 2 very short.
- 2) The male hindwing underside ground colour in the basal and discal areas is basically greenish, very much similar to *pallascens*, not so brilliant brownish as in *taliana*, less shining than in *ornatissima*, with marginal silvery spots present, not obsolete as in *vorax*.
- 3) Both male and female hindwing underside' basal silvery spots are constantly smaller than in *pallascens*, *taliana*, *ornatissima* and *vorax*.
- 4) The female hindwing underside ground colour is very similar to that of *taliana*, being brownish green, more brownish than in the females of *ornatissima*, *vorax* and *pallascens*.

This new subspecies has been proved to be a race of *F. adippe* (ROTTEMBURG, 1775), not of *F. xipe* (GRUM-GRSHIMAILO, 1891), with male genitalia examined, thus can be easily distinguished from *F. xipe gyal* (TYTLER, 1940) from the nearby Namjagbarwa area.

Remarks

A revision of all Chinese taxa of *Fabriciana* is being prepared by the author. Before going farther, I should point out that *Fabriciana niobe yuanfengi* HUANG, 1999 is a new junior synonym of *Fabriciana niobe orientalis* (ALPHERAKY, 1881), holotype of *yuanfengi* and lectotype of *orientalis* examined.

Type data

Holotype ♂: LF 29.5 mm.

Paratypes: 8 ♂♂ (LF 29–31 mm) and 11 ♀♀ (LF 32–33 mm), all from Chayu, Chayu area of Tibet, mid August 2000.

This new subspecies is named after its type locality.

30. *Kuekenthaliella eugenia pulchella* subsp. nov.

(Colour plate VI, figs 44, 48)

Diagnosis

After an examination of a good series of specimens from Qinghai, Gansu, Sichuan, and E. Tibet, I draw the conclusion that the subspecies *genia* (FRUHSTORFER, 1903) (type locality: Tatsienlu) (= *rheaoides* REUSS, 1925, = *anargyron* OBERTHÜR, 1914, both from Tatsienlu area) at better should be retained and also applied to specimens from Dongdala, SE. Tibet, being distinct from ssp. *rhea* (GRUM-GRSHIMAILO, 1891) (type locality: Qinghai, also known from Gansu, = *fulgens* BANG-HAAS, 1927). Moreover, from Demula, SE. Tibet, a series of specimens has been collected and they show rather constant differences from either *rhea* or *genia*, deserving a new subspecies. Their geographical and individual variations are discussed as below:

- 1) The male upperside ground colour is usually more reddish and less yellowish in either *genia* or *pulchella* than in *rhea*. But very occasionally more reddish examples of *rhea* can be found.
- 2) The male forewing upperside discal spots are usually conspicuously smaller in either *genia* or *pulchella* than in *rhea*.
- 3) In both sexes the hindwing upperside basal blackish dusting is very variable among individuals of *rhea* and *genia*, but more often is more extensive in *genia* and *pulchella* than in *rhea*.
- 4) On the hindwing underside the cinnamon red colouring in both sexes is invariably much more perfect and clearly defined in *pulchella* than in *rhea* and *genia*, moreover *genia* has more scanty red colouring in males and more greenish colouring in females than *rhea*.

In Tibet, ssp. *genia* and ssp. *pulchella* are restricted to the East of the Namjagbarwa area where it is replaced by ssp. *tibetana* HUANG, 1998 which has white instead of reddish yellow ciliae in the males. All populations of ssp. *rhea*, ssp. *genia* and ssp. *pulchella* have male ciliae reddish yellow, never white.

Type data

Holotype ♂.

Paratypes: 9 ♂♂, 4 ♀♀, all from Demula, Chayu area of Tibet, July 25th and August 12th 2000.

The subspecific name is due to the smaller size and more beautiful appearance of the new subspecies.

Amathusiidae

31. *Faunis aerope longpoensis* subsp. nov.

(Colour plate VI, fig. 46)

Diagnosis

Hitherto only three subspecies of *Faunis aerope* LEECH, 1890 have been described: ssp. *aerope* from Sichuan, ssp. *excelsa* FRUHSTORFER, 1911 from Tonkin, Vietnam (also known from Hainan Island?) and ssp. *masseyeffi* BROOKS, 1949 from Cochinchina and Chapa. The new subspecies from the Nujiang Valley can be very easily distinguished from all these previously known subspecies by the following combination of characters in the females:

- 1) On the upperside the basal areas of both wings are very thinly darker dusted as in ssp. *aerope*, whereas in ssp. *excelsa* the whole basal half of the forewing is darker dusted and the hindwing is evenly dark, whereas in ssp. *masseyeffi* the basal half of the forewing is blackish brown, even darker than in ssp. *excelsa*, and the whole hindwing is completely blackish brown.
- 2) On the upperside the marginal black borders of both wings are much broader than in all the other subspecies, occupying more than the outer at the forewing apex and more than the outer ¼ on the hindwing.

Type data

Holotype ♀: LF 43 mm, Longpo, Nujiang Valley, SE. Tibet, September 5th 2000.

This new subspecies is named after its type locality.

Satyridae

32. *Ypthima yangjiahei* spec. nov.
(figs 78, 113; colour plate VI, fig. 45)

Diagnosis

This new species belongs to the *Ypthima motschulskyi*-group (sensu SHIMA, 1988) because of the following diagnostic features: forewing vein R1 arising before apex of discocellular cell, in male genitalia the lateral membranous portion between tegumen and uncus reduced to a narrow slit, androconia present, elongate and enlarged, male valva strongly narrowed beyond middle, fenestrula reduced and of a small membranous spot without a pair of lateral small membranous spots, costa of male valva without a dorsal spine, sacculus of male valva reduced, apex of aedeagus in dorsal view membranous from apex to apical $\frac{1}{4}$ of right side obliquely with a small triangular sclerite arising from ventral portion and flexed into vesica, costa of male valva not expanded dorsally and apex of valva serrate.

According to SHIMA's analysis and the recent change in taxonomy, the *Y. motschulskyi*-group consists of the following species: *Y. motschulskyi* (BREMER & GREY, 1853) (*Y. obscura* ELWES & EDWARDS, 1893 has been proved to be a synonym of *Y. motschulskyi* by DUBATOLOV & LVOVSKY in 1997, thus *Y. amphithea* MÉNÉTRIÉS, 1859, which is conspecific with *Y. obscura*, should be a synonym or a subspecies of *Y. motschulskyi*, whereas the North and Central Chinese taxon which has been previously treated as *Y. motschulskyi* by many authors should be *Y. multistriata ganus* FRUHSTORFER, 1911—type locality: Qingdao (= *Ypthima multistriata koreana* DUBATOLOV & LVOVSKY, 1997, TL: Corea)), *Y. multistriata* BUTLER, 1883, *Y. perfecta* LEECH, 1892, *Y. sordida* ELWES & EDWARDS, 1893, *Y. lycus* DE NICEVILLE, 1889, *Y. riukuana* MATSUMURA, 1906, *Y. imitans* ELWES & EDWARDS, 1893, *Y. phania* (OBERTHÜR, 1891), *Y. watsoni* (MOORE, [1893]) (*Y. inouei* SHIROZU & SHIMA, 1977 has been proved to be a race of *Y. watsoni* by UEMURA, 1998), *Y. fusca* ELWES & EDWARDS, 1893, *Y. masakii* ITO, 1947, *Y. esakii* SHIROZU, 1960 and *Y. ciris* LEECH, 1891. In external features, the new species described here can be very easily distinguished from nearly all the previously known species of the *Y. motschulskyi*-group—except *Y. ciris*—by the hindwing underside bearing four ocelli and a broad discal whitish fascia just inside of the ocelli in spaces 1c, 2 and 3. Although this new species shares four ocelli with *Y. ciris*, it has the forewing apical ocellus not so oblique as in the latter, the termen of both wings are conspicuously longer, and the hindwing underside discal whitish fascia is much broader.

In male genitalia, this new species has the valva nearly as long as in *Y. multistriata*, *Y. lycus* and *Y. phania*, a little shorter than in *Y. riukuana*, but much shorter than in all the other species of the group, the shape of the serrate apex of the valva is similar to that of *Y. riukuana*, quite different from that of *Y. multistriata*, *Y. lycus* and *Y. phania* and most of the others, the base of the valva is broader than in most species of the group except *Y. phania* and *Y. ciris*, the aedeagus is somewhat straight, not so bent downwards in the middle as in *Y. riukuana*.

The androconia of this new species are a little similar to those of *Y. multistriata* (fig. 112) and most species of the group in general, but in details rather different from all previously known species in having a broad basal portion and a slender apical portion very clearly marked off, the slender apical portion very thin and almost invisible under the microscope and apparently shorter than in all the species of the group.

Remarks

In external features this new species somewhat recalls *Y. tappana* MATSUMURA, 1909, *Y. praenubila* LEECH, 1891 and *Y. huebneri* KIRBY, 1871, but has nothing to do with them in androconia and male genitalia.

Further description of the new species

The male brand is visible to the naked eyes, although the unique holotype male is worn; on the upper-side, the forewing apical ocellus is visible, pupilled with two minute bluish dots and obscurely ringed with yellowish; hindwing ocelli are present in spaces 2 and 3, both pupilled with bluish dots; on the forewing underside the basal half of the wing is darker than the apical half, this is due to the whitish

striation being broader in the area around the apical ocellus than in the basal area; on the hindwing underside the broad whitish fascia is prominently marked just inside of the ocelli in spaces 1c-3 and also in the submarginal area.

Type data

Holotype ♂: LF 21.5 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet, September 5th 2000.

This new species is dedicated to YANG JIA-HE, a very kind friend of the tribe of the Bai, whom I have met at Longpo.

33. *Ypthima dengae* spec. nov.

(figs 79, 115, 117; colour plate VII, figs 49, 53)

Diagnosis

This new species belongs to the *Y. newara*-group (sensu SHIMA, 1988) and is similar to *Y. newara* MOORE, 1874 (fig. 81; col. pl. IX, fig. 72-right) (originally from Nepal with ssp. *yaluzangbui* HUANG, 1999 from Metok, SE. Tibet) in androconia and male genitalia, but can be distinguished from the latter by the following combination of characters:

- 1) The size is constantly larger, the length of the forewing in both sexes averages 22.5 mm against 19 mm in *Y. newara newara* and *Y. newara yaluzangbui*.
- 2) Both sexes: the whitish underside striation is conspicuously broader than in all subspecies of *Y. newara*.
- 3) Both sexes: the underside submarginal fasciae are obsolete, not prominent as in all subspecies of *Y. newara*.
- 4) Female genitalia (four females of the new species and three females of *Y. newara newara* from Nepal examined) (figs 117, 118): the central process of the lamella antevaginalis is much broader at the base and much narrower at the tip than in *Y. newara*, the lateral lobe of the lamella antevaginalis is very much reduced and almost absent, not developed as in *Y. newara*, the lamella postvaginalis in posterior view is much broader than in *Y. newara*.

Remarks

Hitherto five species of the *Y. newara*-group have been described: *Y. newara* from Nepal, with ssp. *yaluzangbui* in Metok, *Y. confusa* from Nepal, with ssp. *muotuoensis* HUANG, 2000 from Metok, *Y. pemakoi* HUANG, 1998 from Metok, *Y. sinica* UEMURA & KOIWAYA, 2000 from Sichuan and E. China, *Y. tiani* HUANG & LIU, 2000 from Sichuan. These species are very similar to one another in external features except *Y. sinica* which has the male brand invisible to the naked eyes, but quite different in female genitalia which should be regarded as the most important diagnostic character in specific classification of this group. In both male and female genitalia, all these species may be separated into two subgroups:

- 1) *Y. newara*-subgroup, consisting of *Y. newara newara* (fig. 81), *Y. newara yaluzangbui* (fig. 80) and *Y. dengae* (fig. 79), in male genitalia with the posterior portion of the tegumen smooth, not bulged and valva thinner, in female genitalia with the inner side of the lamella postvaginalis membranous at the base, not sclerotized and projected at base.
- 2) *Y. confusa* SHIROZU & SHIMA, 1977-subgroup, consisting of *Y. confusa confusa*, *Y. confusa muotuoensis* (fig. 84), *Y. pemakoi* (fig. 85), *Y. sinica* (female genitalia not examined), *Y. tiani tiani* (female genitalia unknown) and *Y. tiani nuai* (new subspecies described below) (fig. 82), in male genitalia with the posterior portion of the tegumen bulged and the valva thicker, in female genitalia with the inner side of the lamella postvaginalis sclerotized and projected at the base, not membranous.

The male genitalia and androconia are not always important in the specific classification of the *Y. newara*-group, especially in each subgroup; for example, both *Y. confusa* and *Y. pemakoi* have been found sympatric in Metok and almost indistinguishable in male genitalia and androconia, but well separated in external features and female genitalia. The female genitalia should be considered as the most important key character in the specific classification of this group as well as in other groups of *Ypthima*.

The androconia of *Y. dengae* (fig. 115) are of the same shape as those of *Y. confusa* and *Y. tiani* HUANG & LIU, 2000, usually narrower than in *Y. newara* but broader than in *Y. pemakoi* (fig. 116). The male genitalia of *Y. dengae* (fig. 79) are nearly identical with those of *Y. newara newara* (fig. 81) and *Y. newara yaluzangbui* (fig. 80).

Type data

Holotype ♀: LF 22.5 mm, Ba-an-tang, Chayu area of Tibet, July 27th 2000.

Paratypes: 3 ♂♂, 7 ♀♀, Lower-Chayu to Upper-Chayu, Chayu, July 27th to August 18th 2000.

This species is named after the tribe of the Deng in Lower-Chayu and Upper-Chayu, almost the smallest tribe in China.

34. *Ypthima tiani nuae* subspec. nov.

(figs 82, 114, 120; colour plate VII, figs 50, 54)

Diagnosis

This taxon belongs to the *Y. newara*-group and is similar to *Y. confusa confusa* (fig. 119; col. pl. IX, fig. 72-left), *Y. confusa muotuoensis* (fig. 84), *Y. pemakoi* (fig. 85) and *Y. tiani*, but can be distinguished from all of them by the following combination of characters:

- 1) The forewing upperside subapical ocellus is clearly ringed with yellow as in *Y. confusa* and *Y. pemakoi*, whereas in *Y. tiani tiani* the yellowish ring is very obscure and ill-defined.
- 2) Male: the underside ground colour is much darker than in *Y. confusa confusa*, *Y. confusa muotuoensis*, *Y. pemakoi* and *Y. tiani tiani*, with the striation not so yellowish as in *Y. pemakoi*, *Y. confusa confusa* and *Y. tiani tiani*.
- 3) Female: the underside striation is more whitish and broader than in *Y. confusa confusa* and *Y. pemakoi* (the females of *Y. tiani tiani* and *Y. confusa muotuoensis* are unknown).
- 4) Male genitalia (figs 82–85): the apical wall of the aedeagus is inflexed into the vesica from both left and right sides for a short distance, such the right slice is as broad as the left slice in both *Y. confusa confusa* and *Y. confusa muotuoensis*, but much broader than the left slice in *Y. pemakoi*, *Y. tiani tiani* and *Y. tiani nuae*; the aedeagus is more bended next to the apex in both *Y. tiani tiani* and *Y. tiani nuae* than in *Y. confusa confusa*, *Y. confusa muotuoensis* and *Y. pemakoi*. (Because *nuae* is identical in details with *Y. tiani* in male genitalia I treat it tentatively as a subspecies of *Y. tiani*. Its true taxonomic position needs an examination of the female genitalia of *Y. tiani tiani* in the future. On the other hand, the female of *muotuoensis* is still unknown as well, but in male genitalia *muotuoensis* is identical with *confusa* in details, thus I have treated *muotuoensis* as a subspecies of *Y. confusa*.)
- 5) Female genitalia (3 females of *Y. tiani nuae*, 2 females of *Y. confusa confusa* from Nepal and 4 females of *Y. pemakoi* examined) (figs 119, 120): the central process of the lamella antevaginalis is conspicuously narrower from the base to the tip than in *Y. confusa confusa*, the lateral lobe of the lamella antevaginalis is much larger and longer than in *Y. confusa confusa* and *Y. pemakoi*, the lamella postvaginalis is similar to that of *Y. confusa confusa*, very different from that of *Y. pemakoi*, but in lateral view more projected at the base than in *Y. confusa confusa*.

Remarks

Although *nuae* shares the same structures in male genitalia with *tiani*, it is possibly independent from *tiani* in specific level because of the viewpoint of zoogeography (the allopatric speciation seems to be very striking in the *Y. newara*-group) and the conspicuous differences in external features.

The androconia of this taxon are very exactly of the same shape as those of *Y. dengae*.

Type data

Holotype ♀: LF 20 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet, September 5th and 6th 2000.

Paratypes: 5 ♂♂ (LF 17.5 mm) and 4 ♀♀, same data as holotype.

The subspecific name is after the tribe of the Nu living along the Nujiang River.

35. *Ypthima sakra nujiangensis* subsp. nov.

(Colour plate VII, fig. 51)

Diagnosis

This new subspecies is closer to ssp. *austeni* (MOORE, 1892) which is distributed in Assam, N. Burma, Yigong of SE. Tibet and the Gaoligongshan Mts., the extreme west of Yunnan, but can be distinguished from the latter as well as from ssp. *leechi* FORSTER, 1944 from Sichuan by the following combination of characters:

- 1) The size is smaller than in both *austeni* and *leechi*, length of forewing 22 mm against 24–25 mm in ssp. *leechi* and *austeni*.
- 2) The underside blackish striation is much denser on the hindwing and wider on the forewing than in both *austeni* and *leechi*, thus the wings appear much darker than in *austeni* and *leechi* on the underside.
- 3) The hindwing upperside spot in space 5 is pronounced as in ssp. *austeni*, not absent as in ssp. *leechi*, the hindwing underside subapical double spots are much bigger than in ssp. *leechi*.

Remarks

Specimens of *austeni* from Yigong, the Namjagbarwa area of SE. Tibet and those from Pianma, Yunnan-Burma border have been examined for comparison with the type series of ssp. *nujiangensis*, the differences above mentioned are not due to seasonal variation, because all the compared specimens are from the same wet-season, mid August to early September. It is interesting that the specimens of *austeni* from the Yunnan-Burma border are quite different from those of *austeni* from Yigong, the same season, in having the upperside ground colour less brownish but more blackish, the underside ground colour more whitish and less yellowish, the underside striation more blackish and less reddish, however identical with the latter in the density of striation. Such differences in coloration are also found in the seasonal variation of *Ypthima newara newara* MOORE, 1874 from Nepal, I incline to regard such differences in coloration as ecological dimorphism. Among specimens of ssp. *austeni* from the Yunnan-Burma border, only very few examples exhibit a rather distinct submarginal black striation on the hindwing underside, resembling *Ypthima nikaea* MOORE, 1874 from Nepal which has been considered by FUJIOKA (1970) and SHIROZU (1979) as a distinct sympatric species from *Y. sakra* MOORE, 1857. However I incline to regard *nikaea* as an ecological form of *sakra*, maybe only the study of the early stages can solve this problem soundly.

Androconia, male and female genitalia of the new subspecies have been examined, no differences can be found from ssp. *austeni* and ssp. *leechi* (specimens from west Sichuan examined).

Type data

Holotype ♂: LF 22 mm, Longpo to Nidadan, September 4th, 2000.

Paratypes: 13 ♂♂, 3 ♀♀, same data as holotype.

This new subspecies is named after the Nujiang River which cuts across the type locality of the new subspecies.

36. *Lethe jalorensis* subsp. nov.

(Colour plate VII, fig. 52)

Diagnosis

Hitherto only three subspecies of *Lethe jalorensis* (DE NICEVILLE, 1880) have been described: ssp. *jalorensis* from W. Himalayas, ssp. *elwesi* (MOORE, 1892) from Sikkim and Burma, ssp. *gelduba* (FRUHSTORFER, 1911) from Sichuan and Yunnan, the new subspecies from the Nujiang Valley can be distinguished from all of them by the following combination of characters:

- 1) The forewing upperside cell spot and discal series of spots are rather clearly defined and prominently whitish, not ill-defined and so obscure as in all the other subspecies.
- 2) The hindwing upperside postdiscal area is apparently paler than in all the other subspecies.

3) The underside discal white spot just beyond the discocellular cell is triangular and much bigger than in all the other subspecies.

Remarks

The male genitalia of this new subspecies have been examined and do not show conspicuous differences from those of ssp. *gelduba* (two males from Ta-t sien-lu examined).

Type data

Holotype ♂: LF 26 mm, 5 km east of Nuola, Nujiang Valley, SE. Tibet, September 1st 2000.

Paratypes: 3 ♂♂, 1 ♀, same data as holotype.

The subspecific name is due to the type locality of the new subspecies.

37. *Lethe gesangdawai* spec. nov.

(fig. 86; colour plate VII, fig. 55)

Diagnosis

This new species is similar to *L. moelleri* (ELWES, 1887) from Sikkim (with ssp. *bruno* TYTLER, 1939 originally from NE. Burma and also found in the valleys of the Dulong River, SE. Tibet), but can be distinguished from the latter by the following combination of characters:

- 1) The forewing upperside discal pale band is conjoined at vein 2, not interrupted by vein 2 as in *L. moelleri*.
- 2) The forewing underside discal band is strongly shifted in at costa, not almost in a smooth line as in *L. moelleri*.
- 3) The hindwing underside discal pale area in the end of the cell and spaces 4–7 is broader than in *L. moelleri*, as pale as the basal areas of hindwing space 2 and forewing spaces 1a–2, not much paler than the basal areas of hindwing space 2 and forewing spaces 1a–2 as in *L. moelleri*.
- 4) The antediscal dark band of the hindwing underside is a little curved and restricted above the cubitus, not extended along space 2 as in *L. moelleri*.

Remarks

I do not know the male genitalia of *L. moelleri*, so I cannot discuss the difference in male genitalia between the new species and *L. moelleri*. However, because these two species are so different in external features and nearly sympatric in nature (a female of *L. moelleri bruno* has been recorded from the Dulong Valley which is no more than 30 km west of the Nujiang Valley), it is at best to treat *gesangdawai* as an independent species. It should be noted that *L. moelleri* has been safely recorded from Guangxi province of China, to the east of Yunnan, thus *L. moelleri* has the constant characteristic antediscal dark band on the hindwing underside in such a vast area from Sikkim to Guangxi.

The recently described *Lethe nosei* (KOIWAYA, 2000) from N. Burma is clearly a relative of *L. jalauida*, with the underside discocellular bar in a straight line with the antediscal dark band, not widely separated from the antediscal band as in *L. gesangdawai*. Another recently described *Lethe moelleri bitaensis* YOSHINO, 1999 from Zhongdian, NW. Yunnan, with waved subbasal and discal lines, has nothing to do with *L. moelleri*, *L. jalauida* and *L. gesangdawai*, however probably is a good subspecies of *L. procne* LEECH, 1891. *Lethe nujiangensis* YOSHINO, 1997 from Gaoligongshan (west slope of Nujiang Valley in Yunnan province) is probably a synonym of *Lethe neofasciata* LEE, 1985 from Pianma, Gaoligongshan, with a broad male band on the forewing upperside, has nothing to do with *L. gesangdawai*.

Type data

Holotype ♂: LF 24.5 mm, 10 km east of Nuola, Nujiang Valley, SE. Tibet, September 1st 2000.

This species is named after a Tibetan friend with whom I have spent seven days marching from Chayu to Chawalong.

38. *Lethe maitrya lijiangensis* subspec. nov.

(Illustrated in HUANG, 1998: 251, col. pl. IV: figs 1d, 2d)

Diagnosis

Hitherto three subspecies of *Lethe maitrya* DE NICEVILLE, 1880 have been described: ssp. *maitrya* from the W. Himalayas, Nepal, Sikkim and Bhutan, ssp. *thawgawa* TYTLER, 1939 from NE. Burma and the Nujiang Valley (col. pl. VII, fig. 56), ssp. *metokana* HUANG, 1998 from Metok, SE. Tibet. This new subspecies from Lijiang, NW. Yunnan can be distinguished from all these previously known subspecies by the following combination of characters:

- 1) The forewing upperside discal band is well marked as a yellow band from the costa to vein 4, becoming obscure in spaces 2 and 3, whereas in ssp. *maitrya*, ssp. *metokana* and ssp. *thawgawa*, it is only traceable near the costa.
- 2) The upperside ground colour is a dark warmer brown, paler and less blackish than in ssp. *maitrya*, ssp. *metokana* and ssp. *thawgawa*, thus the hindwing upperside discal black spots are more conspicuous than in ssp. *thawgawa*, ssp. *maitrya* and ssp. *metokana*.
- 3) The forewing underside discal band is marked with yellow scales from vein 2 to the costa as in ssp. *maitrya* and ssp. *thawgawa*, whereas in ssp. *metokana* it is marked with paler scales only above vein 4, with its inner black edge visible in spaces 1b-3 and much closer to the wing base than in all the other subspecies.
- 4) The forewing underside pale spot in the cell is more traceable than in ssp. *metokana* and ssp. *thawgawa*, but not prominent as in ssp. *maitrya*.
- 5) The underside ground colour is warmer brown and less blackish than in all the other subspecies.

Remarks

This new subspecies has been misidentified as ssp. *thawgawa* by D'ABRERA (1993: 124, specimen from Tsekou) and HUANG (1998: 251, col. pl. IV, figs 1d, 2d).

Type data

Holotype ♂: LF 25.5 mm, Lijiang, NW. Yunnan, 3500 m, August 4th 1992.

Paratypes: 3 ♂♂, same data as holotype.

This new subspecies is named after its type locality.

39. *Aulocera saraswati chayensis* subspec. nov.

(Colour plate VIII, fig. 61)

Diagnosis

Hitherto only two subspecies of *Aulocera saraswati* (KOLLAR, 1848) have been described: ssp. *saraswati* from the NW. Himalayas and ssp. *vishnu* GROSS, 1958 from Sikkim. The new subspecies from Chayu of SE. Tibet can be distinguished from all of them by the following combination of characters in the males:

- 1) The discal bands on the upperside of both wings are conspicuously narrower than in the other two subspecies, always interrupted by blackish veins, whereas in the other two subspecies the veins crossing the band are not blackish on the hindwing.
- 2) The hindwing underside discal band is heavily and broadly margined by black on the inner side, whereas in the other two the band is not apparently margined by black on the inner side.
- 3) The hindwing underside postdiscal black dusting and submarginal whitish dusting are more clearly defined than in the other two subspecies.

Remarks

The male genitalia of this new subspecies have been examined, they are not different from the other two subspecies at all, but can be very easily distinguished from the nearby races of *Aulocera padma*

(KOLLAR, 1848) and *A. loha* (DOHERTY, 1886) from SE. Tibet and NW. Yunnan. From SE. Tibet there is known also *A. loha fulva* EVANS, 1923 (examined) from the Namjagbarwa area.

Type data

Holotype ♂: 20 km north of Chayu, August 15th 2000.

Paratypes: 1 ♂, same data as holotype; 1 ♂, Upper-Chayu, August 5th 2000.

This new subspecies is named after its type locality.

40. *Aulocera merlina pulcheristriata* subsp. nov.

(Colour plate VIII, fig. 62)

Diagnosis

Hitherto only the nominotypical subspecies of *Aulocera merlina* (OBERTHÜR, 1890) has been previously known from West Sichuan (Kangding) and North Yunnan (Lijiang, Kunming, Qujing etc.), the new subspecies from the Nujiang Valley, SE. Tibet can be easily distinguished from the former by the following combination of characters in the females:

- 1) The hindwing underside is very broadly and heavily striated with black and white, closely resembling the sympatric *Aulocera magica amida* GROSS, 1958, whereas in ssp. *merlina* it is basically blackish in ground colour and very sparsely and thinly dusted by whitish striations.
- 2) The discal white spots on the upperside of both wings are less conjoined than in ssp. *merlina*.

Type data

Holotype ♀: on the route between Quzhu and Genong, Nujiang Valley, Tibet, September 4th 2000.

The subspecific name refers to the beautiful black and white striation on the hindwing underside of the new subspecies.

41. *Paroeneis parapumilus* spec. nov.

(figs 90, 91; colour plate VIII, fig. 57)

Review of all taxa of *Paroeneis palaearcticus* (STAUDINGER, 1889)

Before describing the new species from SE. Tibet, an analysis of all taxa of its closely related species, *Paroeneis palaearcticus*, is necessary. I have examined most taxa in both external features and male genitalia and recognised the following subspecies:

- 1) *P. palaearcticus palaearcticus*. Distribution: Mustagata, Altyun-tag, Lob-nor. Synonyms: *lama* ALPHERAKY, *divnogorski* BANG-HAAS, 1927.
- 2) *P. palaearcticus nanshanicus* (GRUM-GRSHIMAILO, 1902). Distribution: East Qinghai, East Qilianshan of Gansu. Synonyms: *illustris* BANG-HAAS, 1927.
- 3) *P. palaearcticus buddha* BANG-HAAS, 1927 (fig. 88; col. pl. VIII, fig. 58). Distribution: West Qinghai (Ku-ku-noor), West Qilianshan of Gansu.
- 4) *P. palaearcticus iole* (LEECH, 1892) (figs 93, 94; col. pl. VIII, fig. 59). Distribution: West Sichuan (Kangding).
- 5) *P. palaearcticus atuntsensis* GROSS, 1958 (figs 89, 92; col. pl. VIII, fig. 60). Distribution: NW. Yunnan (Atuntse), SE. Tibet (Demula).
- 6) *P. palaearcticus auloceroideus* HUANG, 1999 **stat. nov.** Distribution: SE. Tibet (Namjagbarwa area). This subspecies is very close to ssp. *atuntsensis* but differs in the much broader and more conjoined discal bands.

Diagnosis

This new species, *P. parapumilus* (figs 90, 91), is sympatric with *P. palaearcticus atuntsensis* at Demula, and can be distinguished from all the known subspecies of *P. palaearcticus* in specific level by

the following genital structures (male genitalia of *P. palaeartcticus buddha* (fig. 88), *P. palaeartcticus iole* (figs 93, 94) and *P. palaeartcticus atuntsensis* (figs 89, 92) examined):

- 1) The uncus is constantly shorter than in *P. palaeartcticus*.
- 2) The valva is constantly narrower than in *P. palaeartcticus*.

In external features, the new species has the hindwing underside discal pale band very broad, reaching the postdiscal series of black lines, closely resembling *P. pumilus* (FELDER, 1867) and *P. bicolor* (SEITZ, 1909). However the new species has the male brand well marked, even better than in *P. palaeartcticus*, so it can be immediately distinguished from *P. pumilus*, *P. bicolor*, *P. grandis* RILEY, 1923 and *P. sikkimensis* (STAUDINGER, 1889), all of which have no male brand on the forewing upperside of the male. Moreover, the new species has the uncus thinner, the aedeagus longer and the uncus longer and broader than in *P. pumilus* and *P. bicolor*. I have not examined *P. grandis* and *P. sikkimensis* in male genitalia yet, but the constant difference in the male brand is sufficient to recognise the new species.

Remarks

After examining a few specimens of *P. palaeartcticus buddha*, *P. palaeartcticus iole* and *P. palaeartcticus atuntsensis*, I have found that the comparative length and width of upper and lower apical branches of the valva are variable among individuals and cannot be used as diagnostic characters in specific classification, but the width of the valva and the length of the uncus are rather reliable and constant, deserving good key characters in specific classification. The width of the gnathos is variable in different views, so the differences in gnathos shown in the photos may mislead the reader.

It should be emphasized that both *P. palaeartcticus atuntsensis* and *P. parapumilus* are strictly sympatric at Demula, the former has an early emergence and occupies higher altitudes than the latter; this sympatric fact and the difference in male genitalia prove *parapumilus* to be a good species.

Type data

Holotype ♂: 10 km south of Demula, 4000 m, August 11th 2000.

Paratypes: 3 ♂♂, same data as holotype; 1 ♂, south of Yela, 4000 m, July 23rd 2000.

The specific name is due to the external similarity between *P. pumilus* and the new species.

Papilionidae

42. *Byasa dasarada nujiangana* subsp. nov.

(Colour plate IX, figs 65, 73)

Diagnosis

The new subspecies from Nujiang Valley is distributed near ssp. *barata* (ROTHSCHILD, 1895) from Burma (Shan State and Tenasserim) and Indo-China and ssp. *dasarada* (MOORE, 1857) from Sikkim and Assam, but can be distinguished from either of them as well as ssp. *ravana* (MOORE, 1857) from Kashmir and Kumaon and ssp. *melanura* (ROTHSCHILD, 1908) (= *Byasa stenoptera* CHOU & GU, 1994) from Hainan by the following combination of characters in both sexes:

- 1) On both sides the hindwing spot in space 6 is prominent as in ssp. *ravana*, not absent or hardly seen as in ssp. *dasarada*, ssp. *barata* and ssp. *melanura*.
- 2) The hindwing underside spots in space 7 and the bases of spaces 1c and 2 are only present in ssp. *ravana*, but absent in the new ssp. and the others.
- 3) On both sides the hindwing submarginal spots in spaces 1c, 2 and at the end of the tail are larger and less tinged with crimson than in ssp. *barata* and ssp. *melanura* (in *melanura* the spot at the end of the tail is absent).
- 4) On both sides the hindwing submarginal spot in space 4 is larger and nearer to spot in 5 than in ssp. *barata* and ssp. *melanura*.

Remarks

In wing-pattern this new subspecies somewhat recalls *B. nevilli* (WOOD-MASON, 1882) (= *chentsong* OBERTHÜR, 1886) and *B. hedistus* JORDAN (= *ouvardi* OBERTHÜR, 1920), but differs from them in shape of the hindwing (such as tails shorter), placement of pale spots (such as both *nevilli* and *hedistus* without pale spot at the end of the tail) and male genitalia.

Type data

Holotype ♂: LF 54 mm, Longpo to Nidadan, Nujiang Valley, SE. Tibet, September 6th 2000.

Paratype: 1 ♀, LF 55 mm, Nidadan, Tibet-Yunnan border, September 7th 2000.

This new subspecies is named after its type locality.

List of collection from the Tibetan areas (including Batang)

Hesperiidae

1. *Choaspes benjaminii japonica* (MURRAY, 1875). 2 ♂♂, Tiyu, Chayu, August.
2. *Lobocla germanus* (OBERTHÜR, 1886). 1 ♀, Wenquan of Mangkang, July.
3. *Lobocla proximus* (LEECH, 1891). 1 ♀, Wenquan of Mangkang, July.
4. *Celaenorrhinus patula* DE NICEVILLE, 1889 (= *Celaenorrhinus dayaoensis* KOIWAYA, 1996 **syn. nov.** type locality: Dayao Mts., Guangxi, China). 5 ♂♂, 3 ♀♀, Tiyu, July and August (col. pl. IX, fig. 78). From the more western Metok area one pair of this species has been collected, they are smaller than specimens from Chayu but agree well with KOIWAYA's holotype of *C. dayaoensis*. As EVANS (1949: 97) has stated, this species shows great ecological variation: a small one and a large one, my specimens from Metok (col. pl. IX, fig. 79) and the holotype of *dayaoensis* represent the small form whilst my specimens from Chayu (col. pl. IX, fig. 78) represent the large form. The male genitalia of both Metok and Chayu examples have been examined (figs 100, 101) and they agree with the figure by KOIWAYA exactly and with EVANS' figure in main characters taking into account EVANS' bad handdrawing.
5. *Celaenorrhinus tibetana* (MABILLE, 1876). 2 ♂♂, 1 ♀, Tiyu, Chayu, August.
6. *Celaenorrhinus ratna nujiangensis* HUANG, 2001.
7. *Daimio phisara phisara* (MOORE, 1884). 15 ♂♂ and ♀♀, Tiyu, August.
8. *Daimio tethys birmana* EVANS, 1926. 3 ♂♂, Longpo to Nidadan, September.
9. *Erynnis pelias pelias* (LEECH, 1891). 1 ♂, Wenquan of Mangkang, July.
10. *Carterocephalus houangty shoka* EVANS, 1915. 1 ♀, Batang, July.
I have not seen a record of the female of this taxon before, it is possibly the first record of the female.
11. *Halpe unicolora* HUANG, 1999. 7 ♂♂, 1 ♀, Tiyu, 2000 m, July and August.
12. *Notocrypta eitschbergeri* HUANG, 2001.
13. *Hesperia comma dimila* MOORE, 1874. 1 ♂, Dongdala, 4400 m, July.
14. *Ochlodes subhyalina chayuensis* HUANG, 2001.
15. *Ochlodes thibetana thibetana* (OBERTHÜR, 1886). 4 ♂♂, Batang, July; 3 ♂♂, Mangkang, July; 4 ♂♂, 1 ♀, Chawalong to Genong, September.
16. *Potanthus confucius dushta* (FRUHSTORFER, 1911). 15 ♂♂, 3 ♀♀, Tiyu, Chayu, August.
17. *Potanthus taqini* HUANG, 2001.
18. *Parnara guttatus mangala* (MOORE, [1865]). 2 ♂♂, Longpo to Nidadan, September.

19. *Pelopidas sinensis* (MABILLE, 1877). 18 ♂♂ and ♀♀, Lower-Chayu, Tiyu, Chayu, July and August.
20. *Pseudoborbo bevani* (MOORE, 1878). 5 ♂♂, Chayu, Tiyu, August; 3 ♂♂, 1 ♀, Longpo to Nidadan, September.
21. *Polytremis discreta discreta* (ELWES & EDWARDS, 1897). 3 ♂♂, Longpo to Nidadan, September.

Lycaenidae

22. *Everes argiades tibetanus* LORKOVIC, 1943. 7 ♂♂, 2 ♀♀, Batang and Wenquan of Mangkang, July 19th–21st 2000.
The specimens belong to the second generation of *tibetanus*.
23. *Everes argiades nujiangensis* HUANG, 2001.
24. *Everes argiades chayensis* HUANG, 2001.
25. *Tongeia ion cratylus* (FRUHSTORFER, 1915). 3 ♂♂, Batang and Wenquan of Mangkang, July.
26. *Tongeia bella* HUANG, 2001.
27. *Tongeia amplifascia* HUANG, 2001.
28. *Tongeia pseudozuthus* HUANG, 2001.
29. *Tongeia potanini potanini* (ALPHERAKY, 1889). 4 ♂♂, Longpo to Nidadan, September.
30. *Bothrinia chennellii chennellii* (DE NICEVILLE, 1884). 1 ♂, Longpo to Nidadan, September.
31. *Celastrina argiolus iyntheana* (DE NICEVILLE, 1884). 12 ♂♂, 2 ♀♀, Tiyu, Chayu, August.
32. *Celastrina argiolus caphis* (FRUHSTORFER, 1922). 3 ♂♂, 2 ♀♀, Wenquan of Mangkang, July.
33. *Celastrina oreas limingani* HUANG, 2001.
34. *Acytolepis puspa gisca* (FRUHSTORFER, 1910). 1 ♂, Tiyu, July.
35. *Celatoxia marginata marginata* (DE NICEVILLE, 1884). 2 ♂♂, Longpo, September.
36. *Udara albocaerulea albocaerulea* (MOORE, 1879). 1 ♂, Tiyu, August.
37. *Udara dilecta dilecta* (MOORE, 1879). 3 ♂♂, 2 ♀♀, Tiyu, August; 2 ♂♂, 2 ♀♀, Mengong, September.
38. *Albulina orbitulus demulaensis* HUANG, 2001.
39. *Albulina orbitulus dongdalaensis* HUANG, 2001.
40. *Albulina lucifuga* (FRUHSTORFER, 1915) **comb. nov.** (= *Lycaena lucifera lucifuga* FRUHSTORFER, 1915, TL: Batang; *Plebejus biton lucifuga*: D'ABRERA, 1993; *Plebejus lucifuga*: BALINT & JOHNSON, 1997). 1 ♂, 30 km NE of Batang, July (figs 95–97; col. pl. IX, fig. 63).
Both *lucifuga* (figs 95–97; col. pl. IX, fig. 63) and *themis* (figs 98, 99; col. pl. IX, fig. 64) have been treated as species of *Plebejus* and placed into the *Plebejus lucifera*-group by BALINT & JOHNSON (1997), however they are actually species of *Albulina* because the aedeagus is shorter and thicker than in *Plebejus*, *Polyommatus* and all the other genera of the *Polyommatus* section (sensu ELIOT, 1973), with the suprazonal portion no more than half the length of the subzonal portion. According to BALINT & JOHNSON's reformation, all the species of *Plebejus* have the aedeagus much longer and thinner than in *Albulina*, with the suprazonal and subzonal portions equal in length as in *Aricia*. Although BALINT & JOHNSON have declared they had examined types of both *lucifuga* and *themis*, I am convinced that they only examined their external features but did not dissected their male genitalia.
The male genitalia of *Albulina lucifuga* (figs 95–97) and *A. themis* (figs 98, 99) are as illustrated, one male of *lucifuga* from Batang and three males of *themis* from Lanzhou area of Gansu examined. The synonymic list of *themis* is as follows: *Albulina themis* (GRUM-GRSHIMAILO, 1891) **comb. nov.** (= *Lycaena themis* GRUM-GRSHIMAILO, 1891, TL: Sinin Mts. in Amdo region; = *Plebejus themis*: BALINT & JOHNSON, 1997).

The taxon *Lucina* (GRUM-GRSHIMAILO, 1902) from Songpan most probably belongs to *Albulina* as well as *themis* and *lucifuga* do, but I have no material at present. It should be noted that there is no evidence to prove that *A. themis* and *A. lucifuga* are sympatric in nature until now.

41. *Pseudozizeeria maha diluta* (FELDER, 1865). 3 ♂♂, 2 ♀♀, Tiyu and Chayu, August; 4 ♂♂, 2 ♀♀, Chawalong to Longpo, September.

42. *Lampides boeticus* (LINNAEUS, 1767). 2 ♂♂, 3 ♀♀, Lower-Chayu to Chayu, August.

43. *Jamides bochus bochus* (STOLL, [1782]). 7 ♂♂, Lower-Chayu, Tiyu, Chayu, August.

44. *Lycaena li li* (OBERTHÜR, 1886). 1 ♂, Batang; 1 ♀, Gamagou below Yela Pass, south of Bangda.

45. *Lycaena ouang ouang* (OBERTHÜR, 1891). 1 ♀, Wenquan of Mangkang, July.

46. *Lycaena ouang nujiangensis* HUANG, 2001.

47. *Lycaena standfussi subbrunnea* (SOUTH, 1913). 3 ♂♂, Demula, July and August.

48. *Heliophorus eventa* FRUHSTORFER, 1918. 11 ♂♂, 4 ♀♀, Mengong to Nidadan, September.

49. *Heliophorus androcles trilunulata* HUANG, 1999. 15 ♂♂, 5 ♀♀, Tiyu, Lower-Chayu, Chayu, July–August.

50. *Satyrium oenone benzilanensis* YOSHINO, 1999. 3 ♂♂, 3 ♀♀, Batang; 2 ♂♂, Wenquan of Mangkang, July.

51. *Satyrium xumini* HUANG, 2001.

52. *Esakiozephyrus longicaudatus* HUANG, 2001.

53. *Esakiozephyrus bieti mangkangensis* HUANG, 2001.

54. *Teratozephyrus camurius chayuensis* HUANG, 2001.

55. *Teratozephyrus tsangkie* (OBERTHÜR, 1886). 1 ♀, Longpo, September.

56. *Chrysozephyrus parakuromon* HUANG, 2001.

57. *Arhopala rama ramosa* (EVANS, 1925). 4 ♂♂, 3 ♀♀, Tiyu to Upper-Chayu, August.

58. *Spindasis lohita himalayanus* (MOORE, 1884). 4 ♂♂, Lower-Chayu to Tiyu, July and August.

59. *Spindasis zhengweilie chayuensis* HUANG, 2001.

60. *Ancema ctesia ctesia* (HEWITSON, 1865) 1 ♂, Tiyu, July.

The nominotypical *ctesia* has been described from Assam and Sikkim, beside this, the population from W. China (Sichuan) has been named as ssp. *agalla* FRUHSTORFER, [1912] but I cannot find any constant differences between these two populations.

61. *Ancema ctesia* ssp. 1 ♂, Genong on Nujiang valley, September 4th 2000.

Only a male is known, which is smaller than the nominotypical subspecies and more violet on the upperside. It does not differ in male genitalia and is probably a different subspecies from the nominate *ctesia*.

62. *Chliaria kina cachara* (MOORE, [1884]). 3 ♂♂, Tiyu to Upper-Chayu, August.

63. *Rapala nissa ranta* SWINHOE, 1897. 3 ♂♂, 6 ♀♀, Tiyu to Upper-Chayu, August; 1 ♀, Nidadan, September.

64. *Rapala nemorensis* OBERTHÜR, 1914. 2 ♂♂, Upper-Chayu, Chayu, August (figs 102, 105, 106, 108; col. pl. IX, fig. 77).

These two specimens agree with the typical specimens from Tsekou, NW. Yunnan very exactly. In external features they differ from *R. bomiensis* LEE, 1979 (figs 103, 104, 107) in the forewing upperside red spot being extended into space 1b and the underside discal band being margined with a more prominent white line on its outer side. An examination of the male genitalia of both species proves them independent from each other at specific level: the aedeagus is conspicuously longer and thinner in

R. bomiensis than in *R. nemorensis*, the cornuti are thinner in *R. bomiensis* than in *R. nemorensis*, the brachium is longer in *R. nemorensis* than in *R. bomiensis*, when being spread completely the conjoined valvae are apparently longer in *R. bomiensis* than in *R. nemorensis*, the cleft between the valvae is longer in *R. nemorensis* than in *R. bomiensis*. Hitherto *R. nemorensis* has been recorded from NW. Yunnan and the Chayu area of SE. Tibet, *R. bomiensis* has been known only from Bomi, Yigong, Linzhi and Milin, SE. Tibet, occupying a more western area than *R. nemorensis*; they are allopatric in nature.

Riodinidae

65. *Zemeros flegyas indicus* FRUHSTORFER, [1904]. 3 ♂♂, Lower-Chayu to Tiyu, August; 2 ♂♂, Longpo, September.

66. *Dodona adonira adonira* HEWITSON, [1866]. 1 ♂, Tiyu, August.

67. *Dodona eugenus venox* FRUHSTORFER, 1912. 3 ♂♂, 1 ♀, Tiyu and Chayu, August.

68. *Dodona dracon putaoa* TYTLER, 1940. 1 ♂, Longpo, September.

69. *Abisara chelina duanhuui* HUANG, 2001.

70. *Abisara fylla fylla* (WESTWOOD, 1851). 1 ♂, Lower-Chayu, July; 1 ♂, Nidadan, September.

Libytheidae

71. *Libythea celtis lepita* MOORE, [1858]. 2 ♂♂, Wenquan of Mangkang, July; 1 ♂, Chayu, August.

Nymphalidae

72. *Melitaea yuenty batangensis* BELTER, 1944. 1 ♂, Wenquan of Mangkang, July.

Hitherto only two subspecies of *M. yuenty* OBERTHÜR, 1886 have been described: ssp. *yuenty* from Tatsienlu, and ssp. *batangensis* from Batang, Sichuan-Tibetan border.

Ssp. *batangensis* can be easily distinguished from ssp. *yuenty* (four males from Ta-Tsien-Lu in my collection examined) by the remarkably larger size, the forewing upperside black apex being narrower, the hindwing upperside marginal black band being narrower, the postdiscal spots closer to the antediscal spots than to submarginal spots on the hindwing upperside, and the postdiscal red band broader on the hindwing underside.

From NW. Yunnan this species has also been recorded, but according to WATKINS (1927: 316) those from Yunnan are only slightly smaller in size than typical *yuenty* from Ta-Tsien-Lu, and do not constitute a separate subspecies.

73. *Melitaea agar agar* OBERTHÜR, 1886. 2 ♂♂, Batang, July.

These two males agree exactly with typical examples from the Tatsienlu area. BELTER (1944) has described a conspicuously smaller subspecies, *minuscule*, from the very alpine area of Batang, which however may be only an alpine form of ssp. *agar* or another species distinct from *agar*.

74. *Melitaea jezebel* OBERTHÜR, 1896. 3 ♂♂, Dongdala, July; 3 ♂♂, Yela, July; 3 ♂♂, Demula, July, 4 ♂♂, Litang, July.

M. jezebel is a distinct species from *M. sindura* MOORE, 1865 (mainly distributed from W. Himalaya through Tibet to E. Himalaya), being different constantly in the yellow instead of white marginal bands on the hindwing underside and also in male genitalia (valva broader with the apical hook less curved than in *M. sindura*). From NW. Yunnan, BELTER (1942) recorded both *sindura* and *jezebel* and named the *sindura* form as *M. sindura honei*, but I have not seen such *sindura* specimens from Yunnan yet. Beside the nominotypical subspecies described from the Tatsienlu area, there is only ssp. *yunnana* WATKINS, 1927 described from Shuantan in the valley of the Loma (trib. Mekong—Mekong is called

Lancang River in China), NW. Yunnan. I have six specimens from NW. Yunnan and a large series of examples from Tatsienlu and Litang examined. As WATKINS (1927: 316–317) and HIGGINS (1941: 304–305) have mentioned, there is no constant difference between the two populations, only *yunnana* is often but not constantly darker on the upperside than *jezabel*. Moreover the examples from E. Tibet (Dongdala, Yela, Demula) have the upperside black marginal bands often but not constantly narrower and discal spots are smaller than in examples from Sichuan and Yunnan. Thus I consider at best all these populations should be placed under the same subspecific name, *jezabel*, and *yunnana* should sink as a junior synonym of *jezabel*.

75. *Boloria pales eupales* (FRUHSTORFER, 1903). 13 ♂♂, 4 ♀♀, Demula, August.

The type locality of *eupales* is Khamba-Jong, near Yadong of SC. Tibet. The specimens from Demula agree much better with *eupales* than all the other subspecies described, with the silvery marginal spots of the hindwing underside clearly defined in both male and female. In the Sino-Tibetan area of Asia (including the Qinghai-Xizang Plateau and its just adjacent mountains), other well established subspecies are: ssp. *sifanica* (GRUM-GRSHIMAILO, 1891) (= ssp. *'mingi* KOCMAN, 1995) (? = ssp. *lucida* (BANG-HAAS, 1927)) distributed in Qinghai and Gansu, ssp. *palina* (FRUHSTORFER, 1903) (= ssp. *palinoides* REUSS, 1925) distributed in west Sichuan. Recently KOCMAN (1999) added two new subspecies, viz. ssp. *shambhala* from SE. Qinghai and ssp. *nirvana* from the Lhasa area of C. Tibet, unfortunately he mentioned little about the marginal markings of the hindwing underside and did not publish the underside photos. It is possible that *nirvana* is only a synonym of *eupales*.

76. *Clossiana gong gong* (OBERTHÜR, 1884). 1 ♂, just below Demula, August.

It is interesting that the single male from Demula agrees exactly with examples of ssp. *gong* from Sichuan, not belonging to the more western ssp. *xizangensis* HUANG, 2000 from Bomi.

77. *Kuekenthaliella eugenia pulchella* HUANG, 2001.

78. *Kuekenthaliella eugenia genia* (FRUHSTORFER, 1903). 2 ♂♂, Dongdala, July 23rd 2000.

79. *Kuekenthaliella baileyi* HUANG, 1998. 1 ♂, Demula, August.

At Demula Pass, *K. baileyi* has an earlier emergence than *K. eugenia pulchella*.

80. *Issoria lathonia issaea* (GRAY, 1857). 1 ♂, 1 ♀, Chayu, August.

81. *Speyeria aglaja bessa* (FRUHSTORFER, 1907). 2 ♂♂, Batang, July.

82. *Fabriciana adippe chayensis* HUANG, 2001.

83. *Argyronome laodice rudra* (MOORE, 1857). 2 ♂♂, 7 ♀♀, Longpo to Nidadan, September.

84. *Damora sagana sagana* (DOUBLEDAY, [1847]). 6 ♂♂, 4 ♀♀, Longpo to Nidadan, September.

85. *Argynnis paphia megalegoria* FRUHSTORFER, 1907. 2 ♂♂, 1 ♀, Chayu, August; 1 ♂, Nidadan, September.

86. *Argyreus hyperbius hyperbius* (LINNAEUS, 1763). 1 ♂, 1 ♀, Tiyu and Lower-Chayu, July.

87. *Phalanta phalanta phalanta* (DRURY, [1773]). 1 ♂, Tiyu, August; 1 ♀, Longpo, September.

88. *Vagrans sinha sinha* (KOLLAR, [1844]). 4 ♂♂, Tiyu, August.

89. *Kaniska canace canace* (LINNAEUS, 1763). 2 ♂♂, Tiyu and Chayu, August; 1 ♂, Longpo to Nidadan, September.

90. *Cynthia cardui cardui* (LINNAEUS, 1758). 3 ♂♂, Chayu and Lower-Chayu, July.

91. *Vanessa indica indica* (HERBST, 1794). 4 ♂♂, Tiyu and Lower-Chayu, August.

92. *Eu Vanessa antiopa antiopa* (LINNAEUS, 1758). 1 ♀, Guyu, August.

93. *Polygonia c-album agnicula* MOORE, 1872. 1 ♂, Lower-Chayu, July; 1 ♂, Sangjiu, August.

94. *Polygonia c-aureum c-aureum* (LINNAEUS, 1767). 1 ♀, Genong, September.

95. *Symbrenthia hippoclus lucina* (CRAMER, 1780). 1 ♂, Nidadan, September.

96. *Brensymthia niphanda niphanda* (MOORE, 1872). 1 ♂, Tiyu, August.
97. *Hypolimnas bolina jacintha* (DRURY, 1773). 2 ♂♂, 1 ♀, Nidadan, September.
98. *Hypolimnas misippus* (LINNAEUS, 1764). 1 ♀, lower-Chayu, July.
99. *Junonia orithya ocyale* (HÜBNER, [1819]). 7 ♂♂, 5 ♀♀, Chayu to Upper-Chayu, August.
100. *Neptis mahendra xizangensis* WANG & WANG, 1994. 2 ♂♂, 15 ♀♀, Guyu to Chayu, August.
101. *Neptis soma shania* EVANS, 1924. 4 ♂♂, 2 ♀♀, Upper-Chayu to Lower-Chayu, August; 1 ♂, Longpo, September.
Specimens from Chayu and the Nujiang Valley agree well with typical *shania* from Burma and those from the Yunnan-Burma border (Pian-ma) and N. Yunnan (Dali, Binchuan), with an apparently narrower discal pale band of the hindwing than in all seasonal forms of ssp. *soma* MOORE, 1858 from Assam, Sikkim and the Namjagbarwa area of Tibet.
102. *Neptis sappho astola* MOORE, 1872. 7 ♂♂, 2 ♀♀, Chayu to upper-Chayu, July–August; 3 ♂♂, 3 ♀♀, Chawalong to Nidadan, September.
103. *Neptis hylas kamarupa* MOORE, 1874. 6 ♂♂, 4 ♀♀, Chawalong to Nidadan, September.
104. *Neptis sangangi* HUANG, 2001.
105. *Neptis sankara amba* MOORE, 1858. 1 ♂, Tiyu, August.
106. *Neptis pseudonamba* HUANG, 2001.
107. *Neptis theodora kanekoi* KOIWAYA, 1996. 3 ♀♀, Chayu, August.
108. *Neptis beroe* LEECH, 1890. 2 ♀♀, Tiyu, August.
109. *Neptis dejeani* OBERTHÜR, 1894. 3 ♂♂, Wenquan of Mangkang, July.
110. *Phaedyma aspasia aspasia* (LEECH, 1890). 2 ♂♂, Tiyu and Chayu, August.
111. *Athyma opalina opalina* (KOLLAR, 1844). 14 ♂♂, 4 ♀♀, Tiyu, Chayu, August.
112. *Litinga cottini* (OBERTHÜR, 1884). 4 ♂♂, Batang, July; 1 ♀, Chayu, August.
113. *Limnitis populi batangensis* HUANG, 2001.
114. *Limnitis homeyeri venata* LEECH, 1892. 2 ♂♂, 1 ♀, Longpo to Nidadan, September.
On both upper and under sides the submarginal pale bands are broader than in specimens from Sichuan.
115. *Parasarpa dudu dudu* (WESTWOOD, 1850). 2 ♂♂, Tiyu, August; 1 ♂, Nidadan, September.
116. *Abrota ganga ganga* (MOORE, 1857). 1 ♀, Genong, September.
117. *Euthalia confucius sadona* TYTLER, 1940. 6 ♂♂, Tiyu and Lower-Chayu, end of July to early August.
This subspecies was described from Sadon, NE. Burma. Quite recently YOKOCHI (2000: 43, figs 45, 46) reported its rediscovery in Kachin State of N. Burma. These six males from Chayu, SE. Tibet agree well with those from N. Burma. Besides these records, a single male from Xishuangbanna (S. Yunnan) has been examined and it belongs to *sadona*, too. The difference between *confucius* and *sadona* is as follows:
 - 1) The shape of the forewing is more pointed in *sadona* than in *confucius* at the apex.
 - 2) The forewing upperside of *sadona* nearly has no conspicuous pale colouring in the cell, which is usually present in *confucius*.
 - 3) The forewing discal spot in space 4 of *sadona* is shorter than the spot in space 5, not often longer than the spot in space 5 as in *confucius*.
 - 4) The male valva of *sadona* (three males from Chayu and one male from S. Yunnan have been examined) is remarkably narrower and more gently curved upwards at the posterior margin, less angled than in *confucius* (three males from Sichuan have been examined). (Such differences in male genitalia maybe suggest that *sadona* is independent from *confucius*.)

In both taxa the forewing upperside spot in space 1b can be present or absent, the hindwing upperside discal bands can be restricted above vein 5 or extended into spaces 2–4. The size of *sadona* is often a little smaller than in *confucius* from Sichuan: specimens from SE. Tibet are very slightly smaller than *confucius*, length of forewing 48–49 mm against 50–52 mm; specimens from S. Yunnan are conspicuously smaller, length of forewing 46 mm.

118. *Euthalia pulchella* (LEE, 1979). 2 ♂♂, 1 ♀, Tiyu, August.

Of this mysterious species only one female specimen was known since it was discovered by the Academia Sinica 1973–1974 Expedition to Tibet. Recently YOKOCHI (2000) reported and illustrated a female from N. Burma. Fortunately two males have been captured at Tiyu, the type locality this time. The male is smaller than the female and has the forewing upperside cell marked with an additional yellow spot, closely resembling *Euthalia hebe* LEECH, 1891 and *Euthalia guangdongensis* WU, 1994 **stat. nov.** (= *Euthalia patala guangdongensis* WU, 1994, holotype female from Guangdong Province of China) (= *Euthalia behe* SUGIYAMA, 1996, holotype male from Guangxi Province of China, **syn. nov.**). The male genitalia, as illustrated, are closer to those of *Euthalia hebe*, but different in the appearance of the apex of the valva, with the teeth in different position.

The male has a very rapid and high flight on the tips of the trees, seldom down to the path, often flies up and down the forest slope and never stops on the shrubs or lower branches of a tree, being very alert to the collector. The only way to net the males is hiding and squatting among the shrub just under the path and waiting for the passing males. The female is less alert and sometimes perches on the lower branches and shrubs. Both sexes only fly on sunny days from 10 a.m. to 2 p.m., however there are few sunny days during their emergence at the biotope. The biotope of this rare species is restricted to the forest along the Gongrigabu River between 2000 and 2400 m. It flies together with *Chitoria ulupi*, *Euthalia confucius sadona* and *Neptis berae* etc.

119. *Euthalia alpherakyi chayuensis* HUANG, 2001.

120. *Euthalia alpherakyi njiangensis* HUANG, 2001.

121. *Euthalia nara chayuana* HUANG, 2001.

122. *Pseudergolis wedah wedah* (KOLLAR, [1844]). 5 ♂♂, Lower-Chayu, Tiyu and Chayu, August; 2 ♂♂, Chawalong to Nidadan, September.

123. *Stibochiona nicea nicea* (GRAY, 1846). 2 ♂♂, Tiyu, August; 1 ♂, Longpo to Nidadan, September.

124. *Apatura iris bieti* OBERTHÜR, 1885. 1 ♀ (f. *biети*), Chawalong, September; 1 ♀ (f. *recidiva*), Sangjiu, August.

125. *Chitoria ulupi ulupi* (DOHERTY, 1889). 2 ♂♂, 1 ♀, Tiyu and Upper-Chayu, August.

126. *Dilipa morgiana* (WESTWOOD, [1850]). 1 ♂, Tiyu, August.

127. *Sephisa chandra chandra* (MOORE, [1858]). 2 ♂♂, Tiyu, August; 1 ♀, Chayu, September.

128. *Hestina nama nama* (DOUBLEDAY, 1845). 5 ♂♂, Lower-Chayu to Upper-Chayu, August.

129. *Diagora subviridis* (LEECH, 1891). 1 ♂ (f. *subviridis*), Wenquan of Mangkang, July; 1 ♂ (f. *intermedia*), Genong, September.

There is no conspicuous difference in the male genitalia between these two forms. But both forms differ from *D. chinensis* (LEECH, 1890) in having the ground colour yellow instead of white and in male genitalia having the two points of the apex of the valva more broadly separated. Both forms have been recorded sympatric in Sichuan (Tianquan, Wasigou, etc.).

Amathusiidae

130. *Faunis aerope longpoensis* HUANG, 2001.

Satyridae

131. *Ypthima yangjiahei* HUANG, 2001.
132. *Ypthima dengae* HUANG, 2001.
133. *Ypthima tiani nuae* HUANG, 2001.
134. *Ypthima sakra nujiangensis* HUANG, 2001.
135. *Ypthima parasakra* ELIOT, 1987 ssp. (will be described by Y. UEMURA & S. KOIWAYA). 24 ♂♂, 8 ♀♀, Chayu to Upper-Chayu, July–August.
This population represents a new subspecies, different from either the nominotypical subspecies or the population from the Namjagbarwa area in their brighter underside wing-pattern.
136. *Ypthima baldus luoi* HUANG, 1999. 4 ♂♂, 2 ♀♀, Tiyu, August. 3 ♂♂, 3 ♀♀, Longpo, September.
The name *luoi* is also applied to the populations from Chayu and Chawalong. This subspecies is much darker on the underside than the nominotypical subspecies from the Himalayas, Burma, Indo-China and south China.
137. *Ypthima iris iris* LEECH, 1891. 3 ♂♂, 1 ♀, Wenquan of Mangkang, July.
Just recently UEMURA & KOIWAYA (2000) described ssp. *microiris* from Qamdo, NE. Tibet and ssp. *para-dromon* from NW. Yunnan. However the population from Wenquan of Mangkang undoubtedly belongs to ssp. *iris*.
138. *Ypthima ciris ciris* LEECH, 1891 f. *clinia* OBERTHÜR, 1891. 4 ♂♂, 3 ♀♀, Wenquan of Mangkang, July.
139. *Callerebia baileyi* SOUTH, 1913. 13 ♂♂, 12 ♀♀, Chayu to Upper-Chayu, July–August.
140. *Callerebia polyphemus* OBERTHÜR, 1877. 12 ♂♂, 6 ♀♀, Chawalong to Nidadan, September.
141. *Loxerebia innupta* (SOUTH, 1913). 1 ♂, 1 ♀, Gamagou, July.
142. *Loxerebia megalops* (ALPHERAKY, 1895). 1 ♀, Wenquan of Mangkang, July.
143. *Loxerebia phyllis phyllis* (LEECH, 1891). 1 ♂, Wenquan of Mangkang, July.
144. *Argestina inconstans inconstans* (SOUTH, 1913). 1 ♂, 1 ♀, Guyu to Chayu, August.
145. *Coenonympha sinica* ALPHERAKY, 1888. 2 ♂♂, Ranwu and north of Demula, July.
146. *Aulocera saraswati chayuensis* HUANG, 2001.
147. *Aulocera magica amida* GROSS, 1958. 1 ♀, Chawalong, September.
148. *Aulocera merlina pulcheristriata* HUANG, 2001.
149. *Paroeneis palaeartcticus atuntsensis* (GROSS, 1958). 6 ♂♂, 5 ♀♀, Demula, July and August.
150. *Paroeneis parapumilus* HUANG, 2001.
151. *Parage majuscula* LEECH, 1892. 2 ♀♀, Batang, July.
152. *Parage praeusta* LEECH, 1890. 1 ♀, Nuola, September.
153. *Tatinga thibetana albicans* SOUTH, 1913. 5 ♀♀, Chayu, Sangjiu, August.
154. *Lethe jalaurida nuolaensis* HUANG, 2001.
155. *Lethe moelleri bruno* TYTLER, 1939. 1 ♀, Ridong, August.
The single female captured in the valley of the Dulong River agrees well with TYTLER's description of *bruno* in the darker underside than with ssp. *moelleri* and the absence of the marginal pale line.
156. *Lethe gesangdawai* HUANG, 2001.
157. *Lethe serbonis pallida* TYTLER, 1939? 4 ♂♂, 1 ♀, 50 km north of Chayu, August.
The subspecific name is uncertain, because the type of *pallida* from NE. Burma has not been examined. This species is more variable in ground colour than TALBOT has thought.

158. *Lethe maitrya thawgawa* TYTLER, 1939. 7 ♂♂, 4 ♀♀, Nuola, September.
159. *Lethe verma sintica* FRUHSTORFER, 1911. 3 ♂♂, Tiyu and Chayu, August; 5 ♂♂, Longpo to Nidadan, September.
160. *Lethe confusa confusa* AURIVILLIUS, 1898. 5 ♂♂, Tiyu and Chayu, August.
161. *Neope simulans simulans* LEECH, 1890. 1 ♀, Wenquan of Mangkang, July.
162. *Neope pulahoides pulahoides* (MOORE, 1892). 7 ♂♂, Tiyu and Lower-Chayu, July–August.
An examination of the male genitalia proves that *N. pulaha* (MOORE, 1857) (fig. 109), *N. pulahoides* (MOORE, 1892) (fig. 110) and *N. ramosa* LEECH, 1890 (fig. 111) are independent from each other, with significant differences in the shape of the uncus and especially in the tip of the valva. The taxon *tamur* FUJIOKA, 1970 which was originally described as a subspecies of *N. pulahoides* from E. Nepal should be more allied to *N. ramosa* than to *N. pulahoides* in genital structures.
163. *Mycalesis francisca sanatana* MOORE, 1857. 2 ♂♂, Longpo to Nidadan, September.
164. *Melanites leda ismene* (CRAMER, 1775). 2 ♂♂, Longpo and Nidadan, September.

Danaidae

165. *Parantica sita sita* (KOLLAR, [1844]). 5 ♂♂, Chayu, Tiyu, July–August; 3 ♂♂, 2 ♀♀, Longpo to Nidadan, September.
166. *Parantica pedonga* TALBOT, 1947. 3 ♂♂, Chayu, August.
167. *Euploea mulciber mulciber* (CRAMER, [1777]). 6 ♂♂, Tiyu to Chayu, August; 1 ♀, Longpo, September.

Pieridae

168. *Delias sanaca perspicua* FRUHSTORFER, 1910. 4 ♂♂, 1 ♀, Tiyu to Chayu, July and August.
169. *Aporia agathon agathon* (GRAY, 1831). 1 ♀, Chayu, August.
170. *Aporia delavayi* (OBERTHÜR, 1890). 3 ♂♂, Batang, July; 3 ♂♂, Chayu, July and August.
171. *Aporia procris procris* LEECH, 1890. 2 ♂♂, Batang, July.
172. *Aporia martinetti* (OBERTHÜR, 1881). 1 ♂, 1 ♀, Wenquan of Mangkang, July.
173. *Aporia bieti transiens* ALPHERAKY, 1897. 1 ♀, Zuogong County, July; 1 ♀, Chayu, August; 10 ♂♂, 5 ♀♀, Wenquan of Mangkang, July; 4 ♂♂, 3 ♀♀, Batang, July.
As in specimens from the Namjagbarwa area, these specimens from the extreme East of Tibet show great individual variation: the discocellular bar can be marked very broadly or very narrowly with black, the shape of the forewing varies from elongate to broad.
174. *Mesapia peloria peloria* (HEWITSON, 1853). 3 ♂♂, 1 ♀, Dongdala, July.
175. *Pieris brassicae nepalensis* DOUBLEDAY, 1846. 3 ♂♂, 4 ♀♀, Chayu to Lower-Chayu, August; 1 ♂, Gamagou, July.
176. *Pieris canidia indica* EVANS, 1926. 2 ♂♂, 2 ♀♀, Tiyu and Chayu, August; 3 ♂♂, 1 ♀, Longpo to Nidadan, September.
177. *Pieris erutae erutae* POWJADE, 1888. 3 ♂♂, 3 ♀♀, Chayu, August; 3 ♂♂, 1 ♀, Longpo to Nidadan, September.
178. *Pieris rapae orientalis* OBERTHÜR, 1880. 7 ♂♂, 3 ♀♀, Chayu, August.
179. *Sinopieris dubernardi dubernardi* (OBERTHÜR, 1884). 1 ♂, Batang, July; 2 ♂♂, Demula, August; 1 ♂, Chayu, August.

180. *Gonepteryx mahagurus alvinda* BLANCHARD, 1871. 2 ♂♂, Gamagou, July; 1 ♂, Wenquan of Mangkang, July; 1 ♀, Batang, July; 3 ♂♂, Guyu and Sangjiu, August.

181. *Gonepteryx amintha tibetana* NEKRUTENKO, 1968. 2 ♂♂, Chayu, August.

182. *Colias adelaidae karmalana* GRIESHUBER, 1999. 2 ♂♂, Demula, August.

These two males have the forewing discocellular bar much narrower than in the type series of *karmalana* from Karmala which is to the North of Demula, but do not deserve a separated subspecies.

183. *Colias fieldi* MÉNÉTRIÉS, 1855. 1 ♂, Batang, July; 5 ♂♂, 3 ♀♀, Chayu, August; 2 ♂♂, Genong to Longpo, September.

184. *Colias erate poliographus* MOTSCHULSKY, 1860. 1 ♂, Wenquan of Mangkang, July.

185. *Eurema hecabe hecabe* (LINNAEUS, 1758) (= *contubernalis* (MOORE, 1886) syn.). 2 ♂♂, Chayu, August; 14 ♂♂, 6 ♀♀, Chawalong to Nidadan, September.

The specimens from Chawalong have all forms conspicuously less marked with black on both sides, without any trace of a marginal band on the hindwing, nevertheless they cannot be treated soundly as new subspecies because the specimens from S. China (type locality of ssp. *hecabe*) occasionally have the hindwing marginal band absent.

Papilionidae

186. *Byasa dasarada nujiangana* HUANG, 2001.

187. *Papilio machaon sikkimensis* MOORE, 1884. 1 ♂, Chayu, August.

188. *Papilio xuthus xuthus* LINNAEUS, 1767. 6 ♂♂, 2 ♀♀, Tiyu to Chayu, July–August; 3 ♂♂, Wenquan of Mangkang, July; 3 ♂♂, 3 ♀♀, Chawalong to Nidadan, September.

189. *Papilio helenus helenus* LINNAEUS, 1758. 4 ♂♂, Lower-Chayu to Tiyu, July–August; 1 ♂, Longpo to Nidadan, September.

190. *Papilio polytes romulus* CRAMER, [1775]. 2 ♂♂, Longpo to Nidadan, September.

These two specimens have the hindwing discal whitish band much broader at the central part than usual on both upper and under sides.

191. *Papilio alcmenor alcmenor* FELDER & FELDER, [1865]. 1 ♂, 1 ♀, Tiyu, August.

192. *Papilio protenor euprotenor* (FRUHSTORFER, 1908). 3 ♂♂, Lower-Chayu and Tiyu, July–August; 3 ♂♂, Longpo, September.

193. *Papilio bianor ganesa* DOUBLEDAY, 1842. 5 ♂♂, 1 ♀, Lower-Chayu to Tiyu, July–August; 1 ♂, 3 ♀♀, Longpo to Nidadan, September.

194. *Papilio paris paris* LINNAEUS, 1758. 2 ♂♂, Lower-Chayu and Tiyu, August.

195. *Papilio arcturus arcturus* WESTWOOD, 1842. 1 ♂, Chayu, August.

196. *Graphium cloanthus cloanthus* (WESTWOOD, 1841). 3 ♂♂, lower-Chayu and Chayu, July–August; 1 ♂, Nidadan, September.

197. *Graphium sarpedon sarpedon* (LINNAEUS, 1758). 1 ♂, Lower-Chayu, July.

198. *Parnassius imperator imperator* OBERTHÜR, 1883. 1 ♀, Batang, July.

199. *Parnassius imperator irmae* (BRYK, 1932). 2 ♀♀, Demula, August.

This population from Demula has been named as ssp. *cedermarki*, but no constant difference can be found from the typical *irmae*.

200. *Parnassius orleans lakshmi* MIKAMI, 1998. 1 ♂, Demula, August.

201. *Parnassius epaphus poeta* OBERTHÜR, 1892. 5 ♂♂, 1 ♀, Demula, August; 2 ♂♂, Dongdala, July.

List of scanty collection from Mt. Er-lang-shan (east of Kangding, Sichuan), Litang (west of Kangding, Sichuan) and Pianma (Yunnan-Burma border)

Hesperiidae

1. *Polytremis caerulea* (MABILLE, 1876). 1 ♂, Er-lang-shan, July.
2. *Sovia lucasii lucasii* (MABILLE, 1876). 1 ♂, Er-lang-shan, July.
3. *Aeromachus catocyanea* (MABILLE, 1876). 2 ♂♂, Er-lang-shan, July.
4. *Notocrypta feisthamelii alyos* (MOORE, 1865). 2 ♂♂, Pianma, September.
5. *Ampittia dalailama* (MABILLE, 1876). 1 ♂, Er-lang-shan, July.
6. *Ochlodes bouddha* (MABILLE, 1876). 1 ♂, Er-lang-shan, July.

Lycaenidae

7. *Monodontides musina musinoides* (SWINHOE, 1910). 4 ♂♂, Pianma, September.
8. *Albulina orbitulus litangensis* HUANG, 2001.
9. *Albulina orbitulus tatsienluica* OBERTHÜR, 1910. 7 ♂♂, 3 ♀♀, Mu-ge-co of Kangding (Ta-tsien-lu), July.

Riodinidae

10. *Hyporion lama* LEECH, 1892. 3 ♂♂, Litang, July.

Nymphalidae

11. *Neptis soma shania* EVANS, 1924. 2 ♂♂, Pianma, September.
12. *Neptis themis themis* LEECH, 1890. 1 ♂, Er-lang-shan, July.
13. *Neptis rivularis sinta* ELIOT, 1969. 2 ♂♂, Er-lang-shan, July.
14. *Euthalia khama* ALPHERAKY, 1895. 2 ♂♂, Er-lang-shan, July.
15. *Melitaea jezebel* OBERTHÜR, 1896. 13 ♂♂, Litang, July.
16. *Acraea issoria sordice* (FRUHSTORFER, 1914). 1 ♂, Pianma, September.
17. *Cynthia cardui cardui* (LINNAEUS, 1758). 1 ♂, Er-lang-shan, July.
18. *Symbrenthia hippoclus lucina* (CRAMER, 1780) 1 ♂, Pianma, September.
19. *Parasarpa dudu dudu* (WESTWOOD, 1850). 1 ♂, Pianma, September.

Satyridae

20. *Aphantopus arvensis campana* LEECH, 1892. 4 ♂♂, Er-lang-shan, July.
21. *Parage praeusta* LEECH, 1890. 1 ♂, Er-lang-shan, July.
22. *Ypthima sakra austeni* (MOORE, 1892). 4 ♂♂, Pianma, September.

Pieridae

23. *Aporia larraldei larraldei* (OBERTHÜR, 1876). 1 ♂, Wasigou, July.
 24. *Aporia acraea* (OBERTHÜR, 1886). 1 ♂, Er-lang-shan, July.
 25. *Eurema hecabe hecabe* (LINNAEUS, 1758). 1 ♂, Pianma, September.

Acknowledgements

I wish to express my hearty thanks to the following friends and colleagues who helped with literature, suggestions and specimens during my preparation of this paper: YOSHINOBU UEMURA, YUSUKE TAKANAMI, JIAN LUO, HANS RIEFENSTAHL, SATOSHI KOIWAYA, HITOSHI SUGIYAMA, and FENG YUAN.

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Explanation of figures (abbreviations: DS – dorsal surface, VS –ventral surface)

- Fig. 1: Aedeagus in lateral view of *Notocrypta eitschbergeri* spec. nov., holotype ♂.
- Fig. 2: Tegumen, uncus, gnathos, vinculum and right clasp in lateral view of *Notocrypta eitschbergeri* spec. nov., holotype ♂.
- Fig. 3: Inner side of left clasp in lateral view of *Ochlodes subhyalina chayensis* subspec. nov., paratype ♂.
- Fig. 4: Inner side of left clasp in lateral view of *Ochlodes subhyalina subhyalina* (Qingdao, N. China).
- Fig. 5: Inner side of left clasp in lateral view of *Ochlodes thibetana* (Chawalong, Nujiang Valley, Tibet).
- Fig. 6: Aedeagus in lateral view of *Potanthus taqini* spec. nov., holotype ♂.
- Fig. 7: Outer side of right clasp in lateral view and flattened tegumen in dorsal view of *Potanthus taqini* spec. nov., holotype ♂.
- Fig. 8: Flattened valvae in ventral view of *Tongeia bella* spec. nov., holotype ♂.
- Fig. 9: Flattened valvae in ventral view of *Tongeia amplifascia* spec. nov., paratype ♂.
- Fig. 10: Flattened valvae in ventral view of *Tongeia pseudozuthus* spec. nov., paratype ♂.
- Fig. 11: Flattened valvae in ventral view of *Tongeia zuthus* (Qingchengshan, Sichuan).
- Fig. 12: Flattened left valva in ventral view of *Tongeia menpae menpae* (Metok, SE. Tibet), paratype ♂.
- Fig. 13: Flattened left valva in ventral view of *Tongeia ion ion* (Jizushan, N. Yunnan, specimen shown on col. pl. II, fig. 13).

- Fig. 14: Flattened left valva in ventral view of *Tongeia ion cratylus* (Wenquan of Mangkang, E. Tibet, specimen shown on col. pl. II, fig. 12).
- Fig. 15: Aedeagus in lateral view of *Tongeia bella* spec. nov., holotype ♂.
- Fig. 16: Aedeagus in lateral view of *Tongeia amplifascia* spec. nov., paratype ♂.
- Fig. 17: Aedeagus in lateral view of *Tongeia pseudozuthus* spec. nov., paratype ♂.
- Fig. 18: Aedeagus in lateral view of *Tongeia zuthus* (Qingchengshan, Sichuan).
- Fig. 19: Aedeagus in lateral view of *Tongeia menpae menpae* (Metok, SE. Tibet), paratype ♂.
- Fig. 20: Aedeagus in lateral view of *Tongeia ion ion* (Jizushan, N. Yunnan, specimen shown on col. pl. II, fig. 13).
- Fig. 21: Aedeagus in lateral view of *Tongeia ion cratylus* (Wenquan of Mangkang, E. Tibet, specimen shown on col. pl. II, fig. 12).
- Fig. 22: Signum of *Teratozephyrus camurius chayuensis* subspec. nov., paratype ♀.
- Fig. 23: Signum of *Teratozephyrus tsangkie tsangkie* (Tatsienlu, Sichuan).
- Fig. 24: Signum of *Teratozephyrus tsangkie* ssp. (Nujiang valley, specimen shown on col. pl. IV, fig. 30).
- Fig. 25: Aedeagus in dorsal view of *Rapala micans haniae* subspec. nov., holotype ♂.
- Fig. 26: Aedeagus in dorsal view of *Rapala subpurpurea* (Qingchengshan, Sichuan).
- Fig. 27: Aedeagus in dorsal view of *Rapala micans micans* (Qingdao, N. China, specimen shown on col. pl. IX, fig. 74).
- Fig. 28: Aedeagus in dorsal view of *Rapala nissa ranta* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 76).
- Fig. 29: Genital plate of ♀ genitalia of *Tongeia amplifascia* spec. nov., paratype.
- Fig. 30: Genital plate of ♀ genitalia of *Tongeia pseudozuthus* spec. nov., paratype.
- Fig. 31: Genital plate of ♀ genitalia of *Tongeia zuthus* (Qingchengshan, Sichuan).
- Fig. 32: Tegumen, uncus, brachium and vinculum in flattened shape of *Satyrium xumini* spec. nov., holotype ♂.
- Fig. 33: Valvae spread in ventral view of *Satyrium xumini* spec. nov., holotype ♂.
- Fig. 34: Valvae spread in ventral view of *Satyrium eximia* (Tatsienlu, Sichuan).
- Fig. 35: Valvae spread in ventral view of *Satyrium eximia* (Qingdao, N. China).
- Fig. 36: Aedeagus in lateral view of *Satyrium xumini* spec. nov., holotype ♂.
- Fig. 37: Aedeagus in lateral view of *Satyrium eximia* (Tatsienlu, Sichuan).
- Fig. 38: Tegumen, uncus (right brachium broken and left brachium taken off) and vinculum spread in dorsal view and aedeagus in lateral view of *Esakiozephyrus longicaudatus* spec. nov., holotype ♂.
- Fig. 39: Valvae and saccus spread in ventral view of *Esakiozephyrus longicaudatus* spec. nov., holotype ♂.
- Fig. 40: Left valva and saccus spread in ventral view and aedeagus in lateral view of *Esakiozephyrus zhengi*, holotype ♂.
- Fig. 41: Tegumen, uncus, brachium and left valva spread and aedeagus in lateral view of *Esakiozephyrus mandara major*, holotype ♂.
- Fig. 42: Valvae spread and aedeagus in lateral view of *Esakiozephyrus mandara major*, paratype.
- Fig. 43: Right valva and saccus spread and aedeagus in lateral view of *Esakiozephyrus bieti takanamii*, holotype ♂.
- Fig. 44: Valvae spread and aedeagus in lateral view of *Esakiozephyrus bieti bieti* (Tatsienlu, Sichuan).
- Fig. 45: Valvae spread + aedeagus in lateral view of *Esakiozephyrus bieti mangkangensis*, holotype ♂.
- Fig. 46: ♀-genitalia of *Chrysozephyrus parakuromon* spec. nov., holotype, consisting of papilla analis, the eighth abdominal tergum, genital plate, ductus bursae, bursa copulatrix and signa.
- Fig. 47: ♀-genitalia of *Esakiozephyrus longicaudatus* spec. nov., paratype, consisting of genital plate, ductus bursae, bursa copulatrix and signa.
- Fig. 48: ♀-genitalia of *Esakiozephyrus mandara major*, paratype, consisting of genital plate, ductus bursae, bursa copulatrix and signa.
- Fig. 49: ♀-genitalia of *Esakiozephyrus bieti takanamii*, paratype, consisting of genital plate, ductus bursae, bursa copulatrix and signa.
- Fig. 50: ♀-genitalia of *Teratozephyrus tsangkie* ssp. (Nujiang Valley, Tibet) consisting of papilla analis, the eighth abdominal tergum, genital plate and ductus bursae.

Fig. 51: ♀-genitalia of *Teratozephyrus tsangkie tsangkie* (Tatsienlu, Sichuan) consisting of papilla analis, the eighth abdominal tergum, genital plate and ductus bursae.

Fig. 52: ♀-genitalia of *Teratozephyrus camurius chayuensis* subsp. nov., paratype, consisting of papilla analis, the eighth abdominal tergum, genital plate and ductus bursae.

Fig. 53: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala mican micans* (Qingdao, N. China, specimen shown on col. pl. IX, fig. 74).

Fig. 54: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala micans haniae* subsp. nov., holotype ♂.

Fig. 55: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala nissa ranta* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 76).

Fig. 56: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala subpurpurea* (Qingchengshan, Sichuan).

Fig. 57: Tip of aedeagus in dorsal view to show cornuti of *Rapala mican micans* (Qingdao, N. China, specimen shown on col. pl. IX, fig. 74).

Fig. 58: Tip of aedeagus in dorsal view to show cornuti of *Rapala micans haniae* subsp. nov., holotype ♂.

Fig. 59: Tip of aedeagus in dorsal view to show cornuti of *Rapala nissa ranta* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 76).

Fig. 60: Tip of aedeagus in dorsal view to show cornuti of *Rapala subpurpurea* (Qingchengshan, Sichuan).

Fig. 61: ♂-genitalia of *Abisara chelina duanhuui* subsp. nov., holotype, consisting of genital capsule and aedeagus in lateral view with left valva removed to the left top of the figure.

Fig. 62: ♂-genitalia of *Abisara neophron* (Metok, Tibet, specimen shown on col. pl. IV, fig. 35) consisting of genital capsule and aedeagus in lateral view with left valva removed to the left top of the figure.

Fig. 63: ♂-genitalia of *Neptis pseudonamba* spec. nov., holotype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 64: ♂-genitalia of *Neptis namba namba* (Metok, Tibet) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 65: ♂-genitalia of *Neptis ananta chinensis* (Qingchengshan, Sichuan) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 66: ♂-genitalia of *Neptis sangangi* spec. nov., paratype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 67: ♂-genitalia of *Neptis yerburii capnodes* (Qingchengshan, Sichuan) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 68: ♂-genitalia of *Neptis clinia susruta* (Metok, Tibet) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 69: ♂-genitalia of *Neptis sangangi* spec. nov., paratype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 70: ♂-genitalia of *Neptis yerburii pandoces* (Metok, Tibet) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 71: ♂-genitalia of *Neptis hylas kamarupa* (Nujiang Valley, Tibet) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 72: ♂-genitalia of *Neptis sappho astola* (Chayu, Tibet) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 73: ♂-genitalia of *Euthalia pulchella* (Tiyu, Chayu area of Tibet) consisting of genital capsule in lateral view with left valva removed.

Fig. 74: Tip of right valva in lateral view of *Euthalia pulchella* (Tiyu, Chayu area of Tibet).

Fig. 75: Right valva in lateral view of *Euthalia alpherakyi chayuensis* subsp. nov., holotype ♂.

Fig. 76: Right valva in lateral view of *Euthalia tsangpoi*, holotype ♂.

Fig. 77: Right valva in lateral view of *Euthalia "duda" sakota* (Jizushan, N. Yunnan).

Fig. 78: ♂-genitalia of *Ypthima yangjiahe* spec. nov., holotype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 79: ♂-genitalia of *Ypthima dengae* spec. nov., paratype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 80: ♂-genitalia of *Ypthima newara yaluzangbui*, paratype, consisting of genital capsule in lateral view with left valva removed.

Fig. 81: ♂-genitalia of *Ypthima newara newara* (Central Nepal) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 82: ♂-genitalia of *Ypthima tiani nuae* subsp. nov., paratype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 83: ♂-genitalia of *Ypthima tiani nuae* subsp. nov., paratype consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 84: ♂-genitalia of *Ypthima confusa muotuoensis*, holotype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 85: ♂-genitalia of *Ypthima pemakoi*, paratype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 86: ♂-genitalia of *Lethe gesangdawai* spec. nov., holotype, consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 87: ♂-genitalia of *Lethe jalaurida nuolaensis* subsp. nov., paratype, consisting of genital capsule in lateral view with left valva removed.

Fig. 88: ♂-genitalia of *Paroeneis palaearcticus buddha* (Gansu, specimen shown on col. pl. VIII, fig. 58) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 89: ♂-genitalia of *Paroeneis palaearcticus atuntsensis* (Demula, Tibet, specimen shown on col. pl. VIII, fig. 60) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 90: ♂-genitalia of *Paroeneis parapumilus* spec. nov., holotype (Demula), consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 91: ♂-genitalia of *Paroeneis parapumilus* spec. nov., paratype (Yela), consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 92: ♂-genitalia of *Paroeneis palaearcticus atuntsensis* (Demula, Tibet) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 93: ♂-genitalia of *Paroeneis palaearcticus iole* (Tatsienlu, Sichuan, specimen shown on col. pl. VIII, fig. 59) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 94: ♂-genitalia of *Paroeneis palaearcticus iole* (Tatsienlu, Sichuan) consisting of genital capsule and aedeagus in lateral view with left valva removed.

Fig. 95: Aedeagus in dorsal view of *Albulina lucifuga* (Batang, specimen shown on col. pl. VIII, fig. 63).

Fig. 96: Tegumen, uncus, brachium and vinculum in dorsal view of *Albulina lucifuga* (Batang, specimen shown on col. pl. VIII, fig. 63).

Fig. 97: Inner side of right valva in lateral view of *Albulina lucifuga* (Batang, specimen shown on col. pl. VIII, fig. 63).

Fig. 98: Inner side of left valva in lateral view of *Albulina themis* (Gansu, specimen shown on col. pl. VIII, fig. 64).

Fig. 99: Aedeagus, tegumen, uncus, brachium and vinculum in dorsal view of *Albulina themis* (Gansu, specimen shown on col. pl. VIII, fig. 64).

Fig. 100: ♂-genitalia of *Celaenorrhinus patula* (Metok, Tibet, specimen shown on col. pl. IX, fig. 79) consisting of genital capsule in lateral view.

Fig. 101: ♂-genitalia of *Celaenorrhinus patula* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 78) consisting of genital capsule in lateral view.

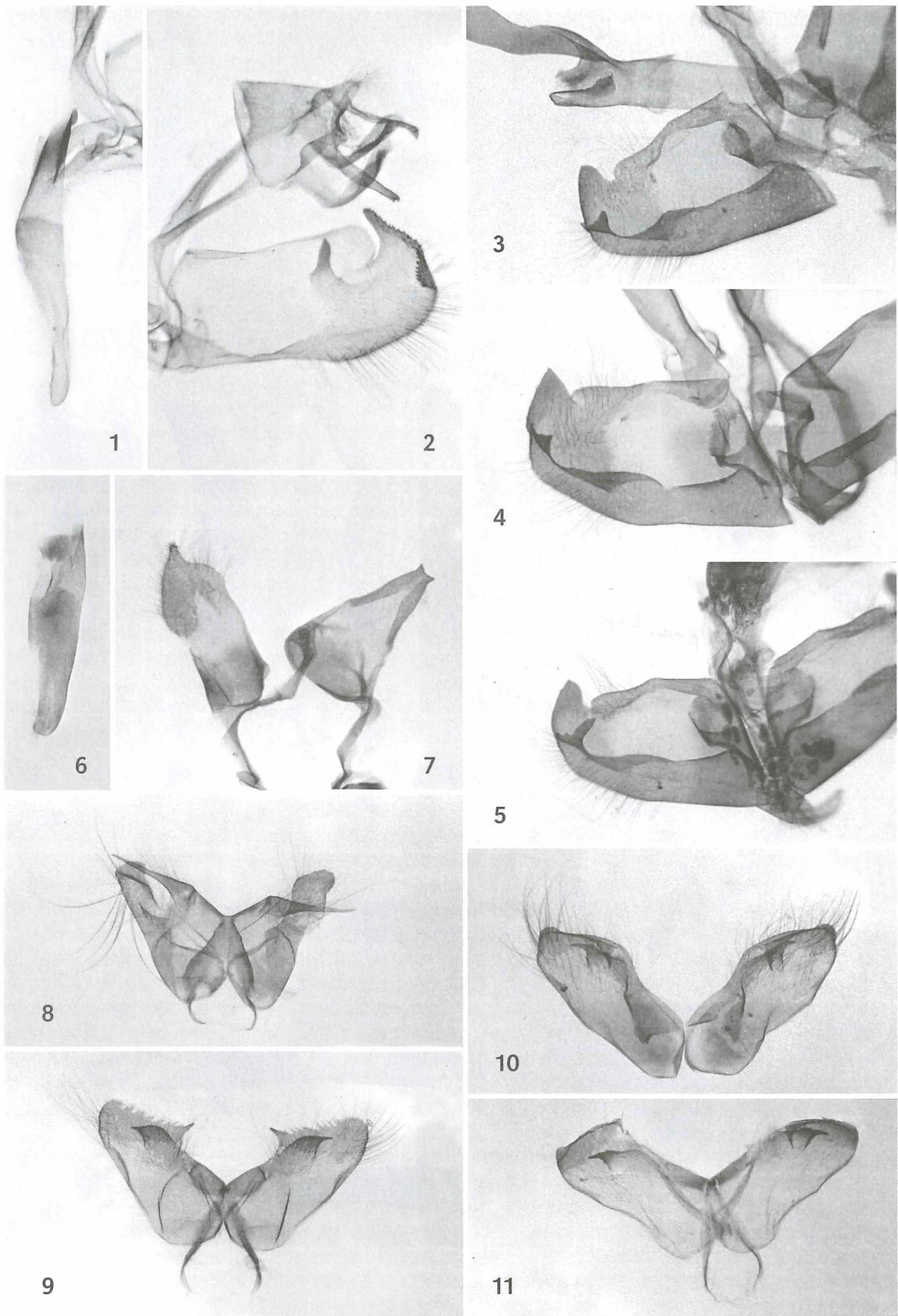
Fig. 102: Tip of aedeagus in dorsal view to show cornuti of *Rapala nemorensis* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 77).

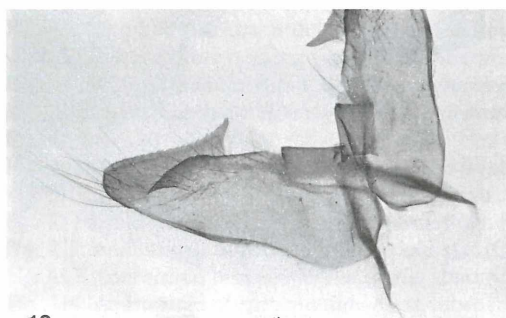
Fig. 103: Tip of aedeagus in dorsal view to show cornuti of *Rapala bomiensis* (Bomi, Tibet).

Fig. 104: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala bomiensis* (Bomi, Tibet).

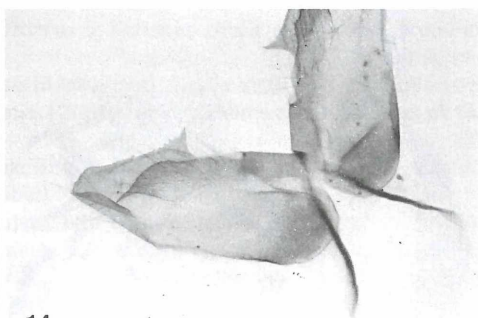
Fig. 105: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala nemorensis* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 77).

- Fig. 106: Tegumen, uncus, brachium, vinculum and saccus in flattened shape and valvae spread in ventral view of *Rapala nemorensis* (Chayu, Tibet).
- Fig. 107: Aedeagus in dorsal view of *Rapala bomiensis* (Bomi, Tibet).
- Fig. 108: Aedeagus in dorsal view of *Rapala nemorensis* (Chayu, Tibet, specimen shown on col. pl. IX, fig. 77).
- Fig. 109: Tip of valva of *Neope pulaha pulaha* (Metok, Tibet).
- Fig. 110: Tip of valva of *Neope pulahoides* (Chayu, Tibet).
- Fig. 111: Tip of valva of *Neope ramosa* (Wuyishan, Fujian, East China).
- Fig. 112: Androconia of *Ypthima multistriata* ssp. (Qujing, N. Yunnan).
- Fig. 113: Androconia of *Ypthima yangjiahei* spec. nov., holotype ♂.
- Fig. 114: Androconia of *Ypthima tiani nuae* subspec. nov., paratype ♂.
- Fig. 115: Androconia of *Ypthima dengae* spec. nov., paratype ♂.
- Fig. 116: Androconia of *Ypthima pemakoi*, paratype ♂.
- Fig. 117: ♀-genitalia of *Ypthima dengae* spec. nov., holotype, consisting of lamella antevaginalis in ventral view with central process spread (left), lamella postvaginalis in ventral view (top right) and both lamella antevaginalis and lamella postvaginalis in lateral view (bottom right).
- Fig. 118: ♀-genitalia of *Ypthima newara newara* (Central Nepal, specimen shown on col. pl. IX, fig. 72 right half) consisting of lamella antevaginalis in ventral view with central process spread (left), lamella postvaginalis in ventral view (top right) and both lamella antevaginalis and lamella postvaginalis in lateral view (bottom right).
- Fig. 119: ♀-genitalia of *Ypthima confusa confusa* (Central Nepal, specimen shown on col. pl. IX, fig. 72 left half) consisting of lamella antevaginalis in ventral view with central process spread (left), lamella postvaginalis in ventral view (top right) and both lamella antevaginalis and lamella postvaginalis in lateral view (bottom right).
- Fig. 120: ♀-genitalia of *Ypthima tiani nuae* subspec. nov., holotype, consisting of lamella antevaginalis in ventral view with central process spread (left), lamella postvaginalis in ventral view (top right) and both lamella antevaginalis and lamella postvaginalis in lateral view (bottom right).

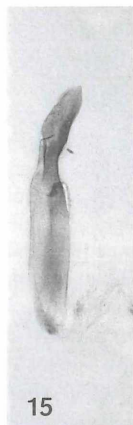




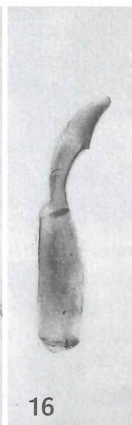
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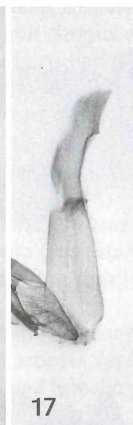
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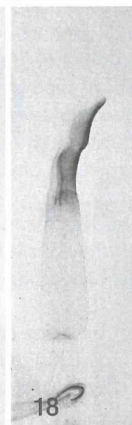
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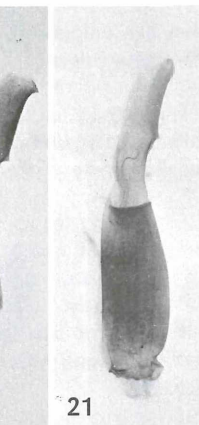
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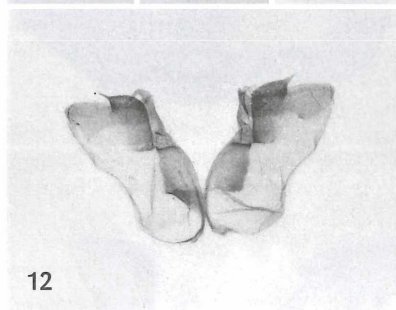
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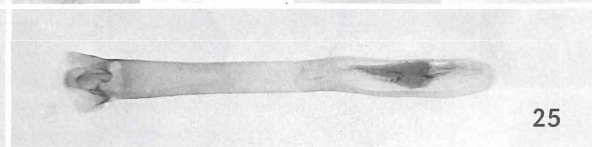
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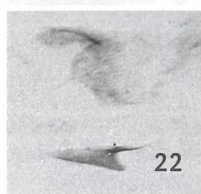
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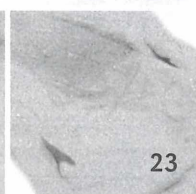
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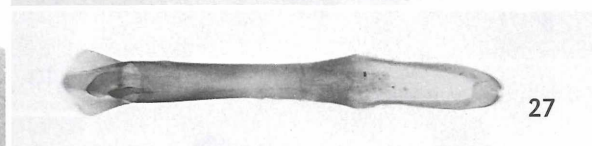
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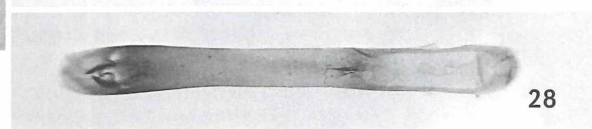
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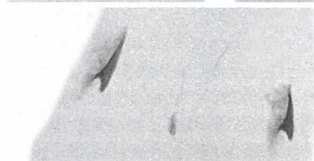
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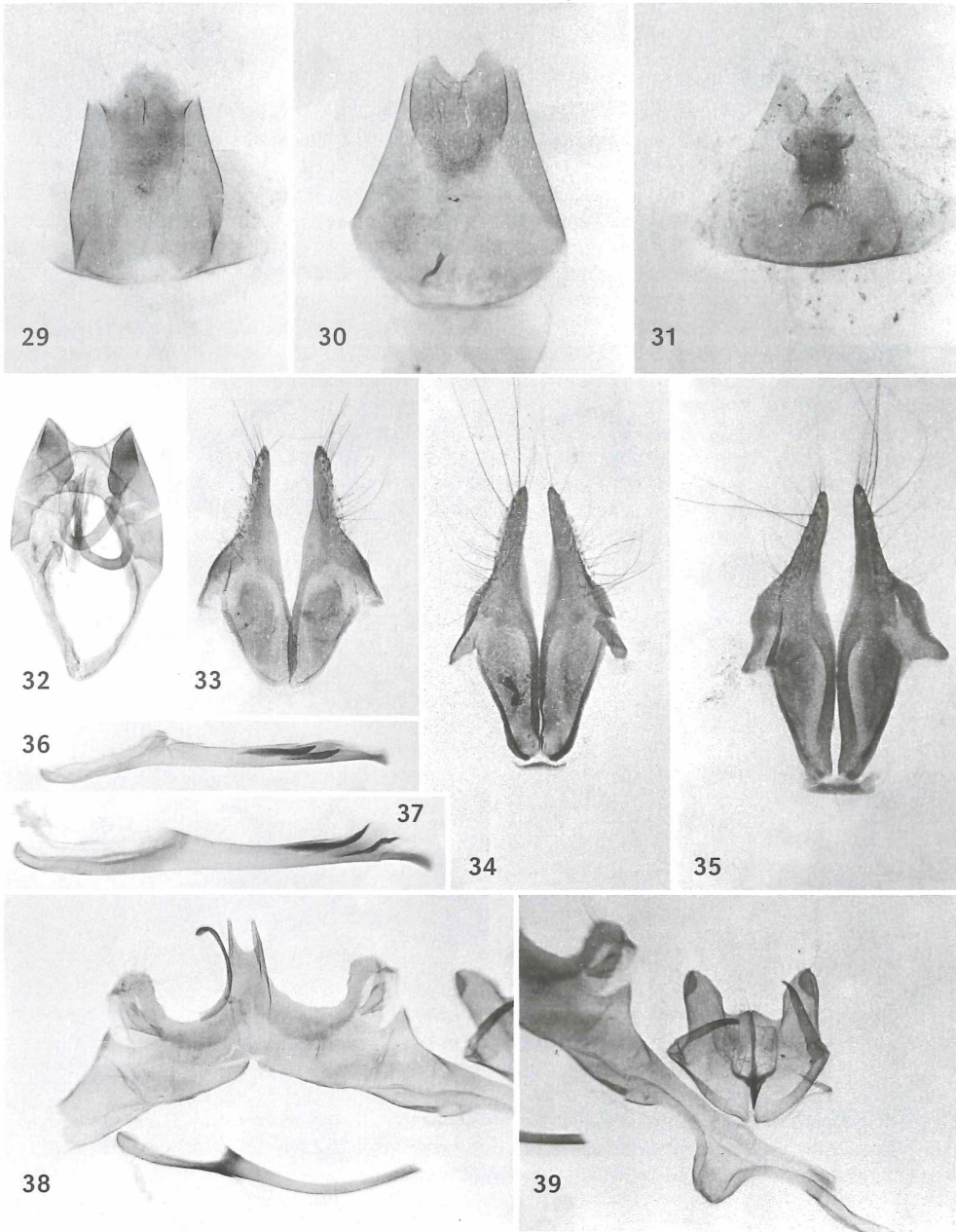
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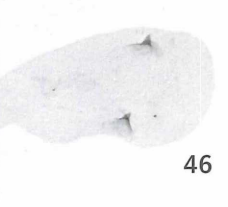
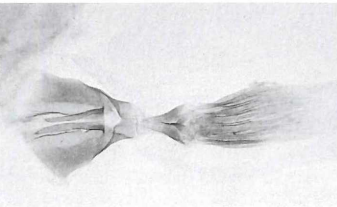
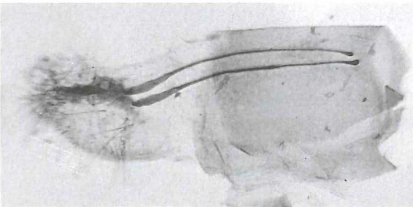
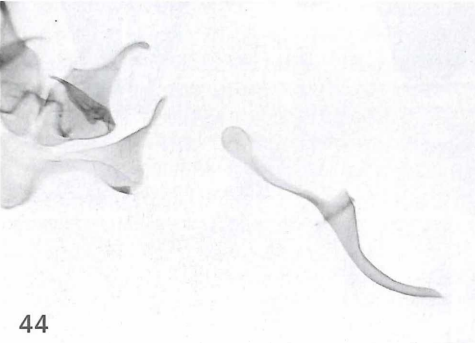
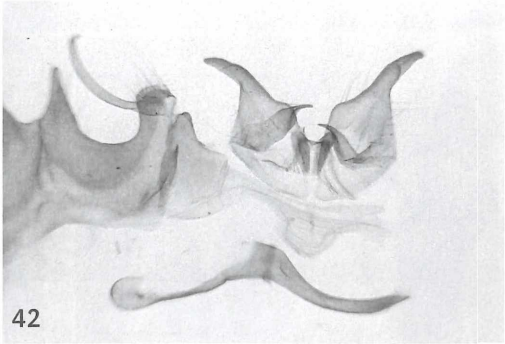
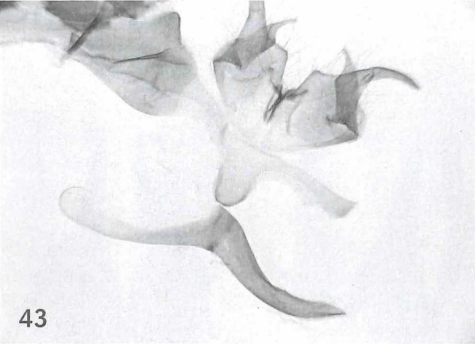
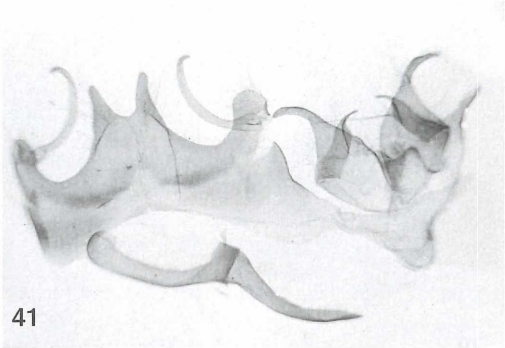
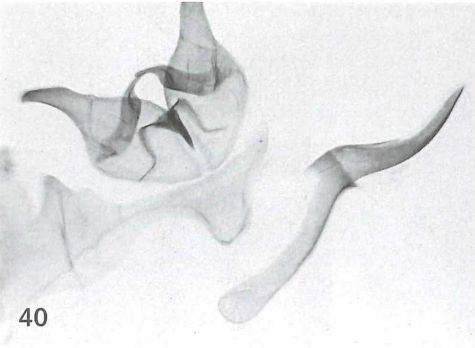


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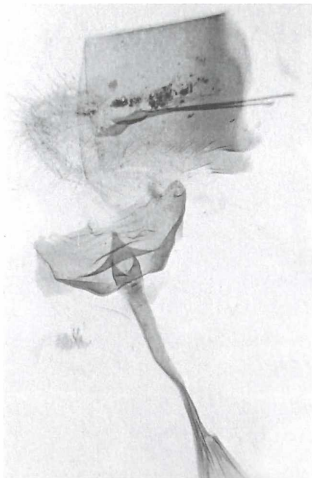


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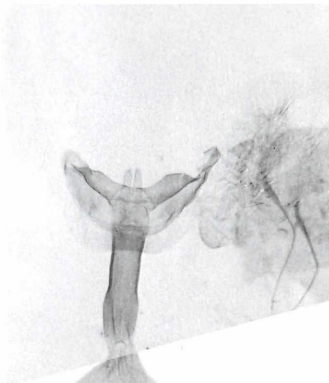




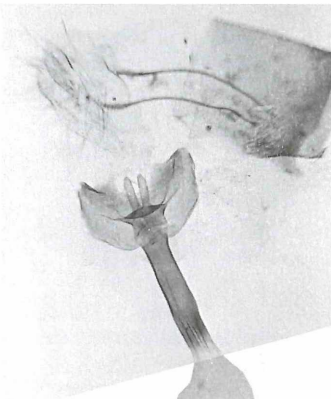
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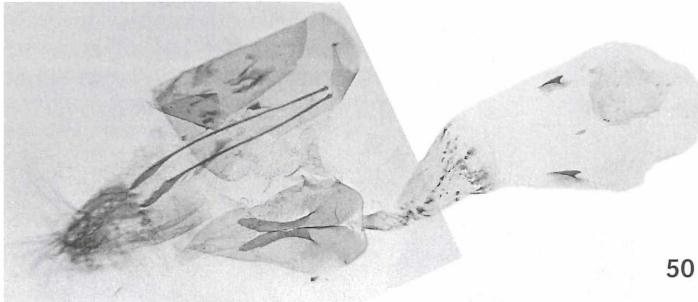
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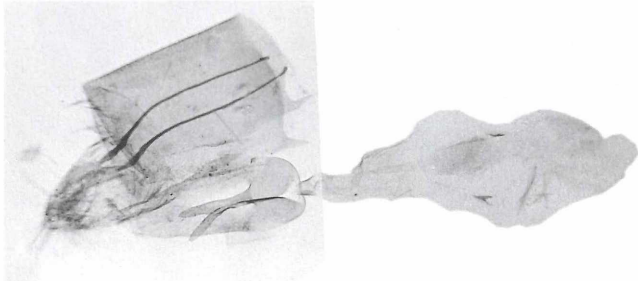
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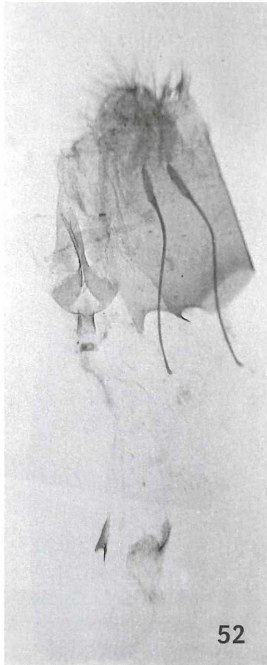
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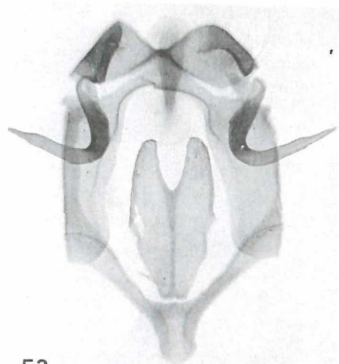
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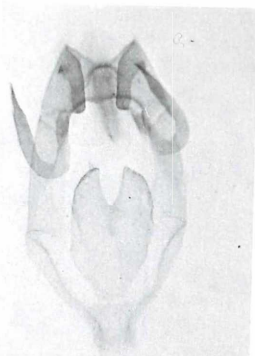
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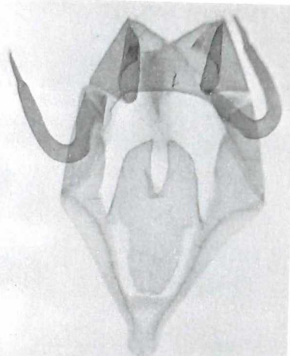
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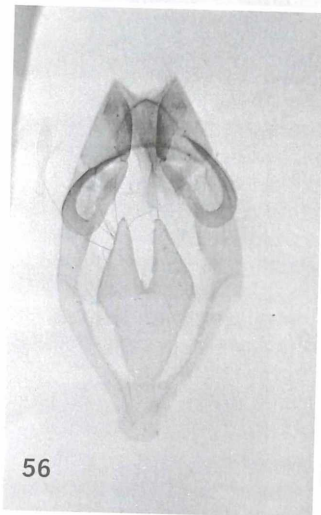
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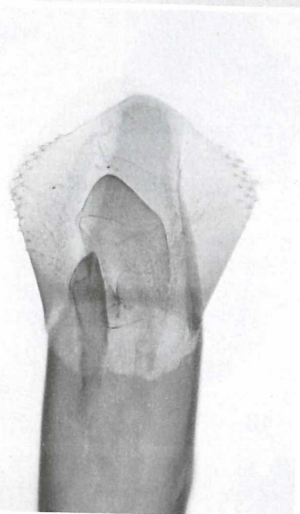
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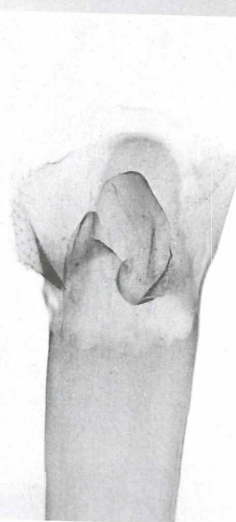
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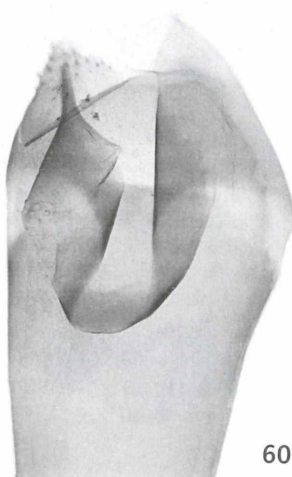
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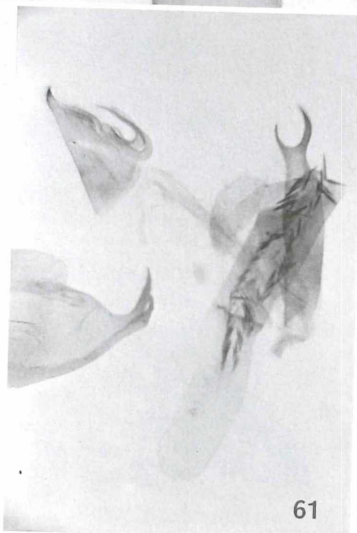
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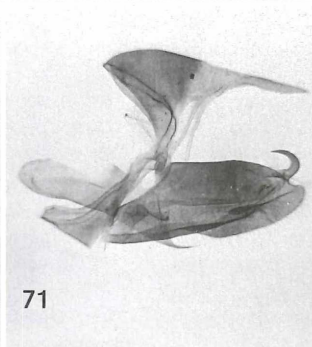
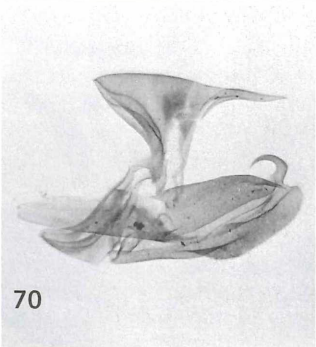
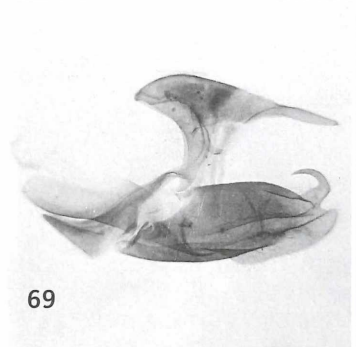
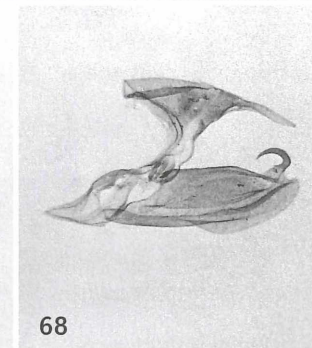
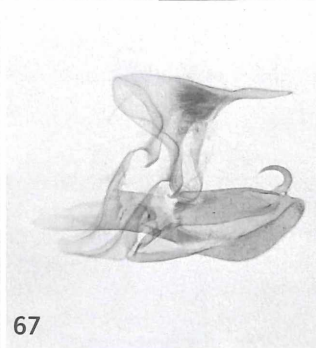
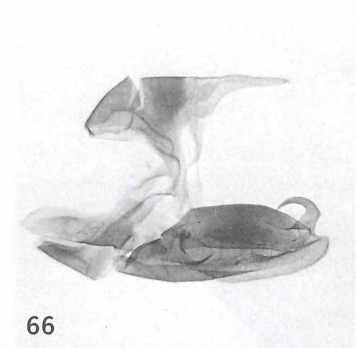
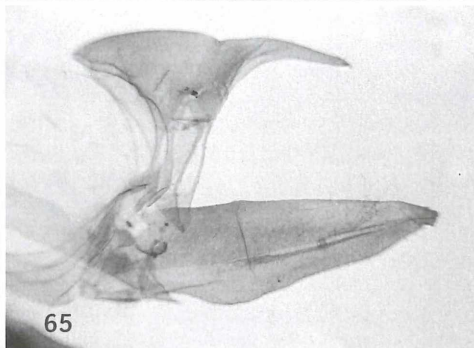
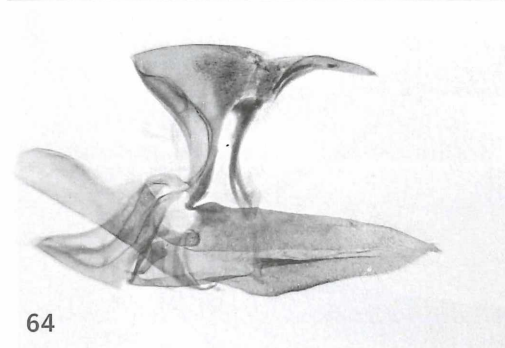
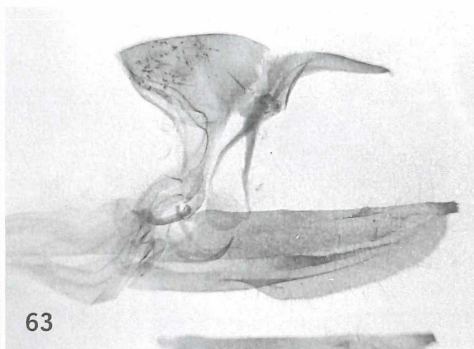
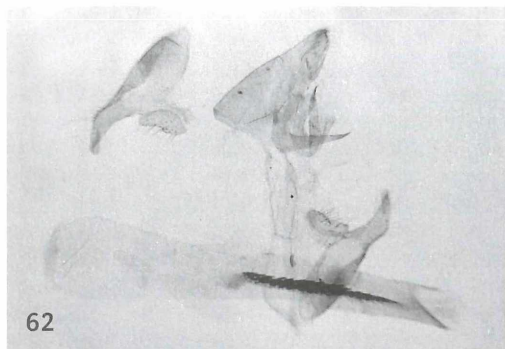
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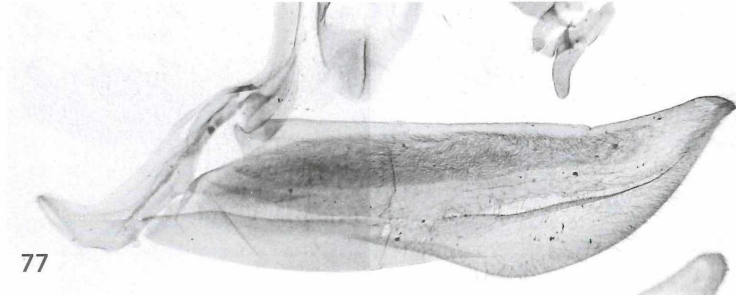
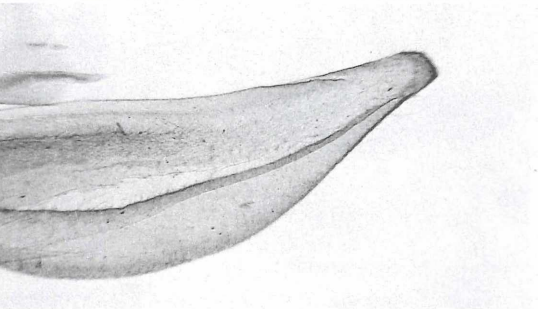
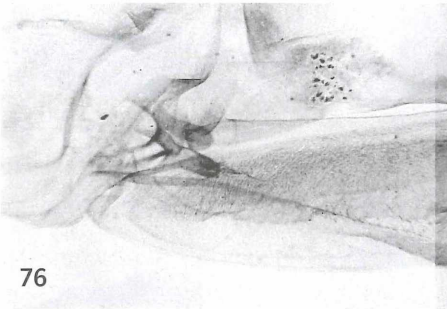
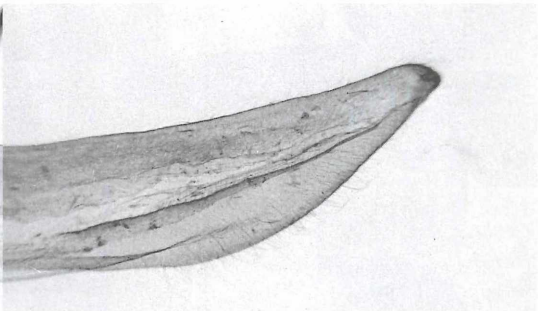
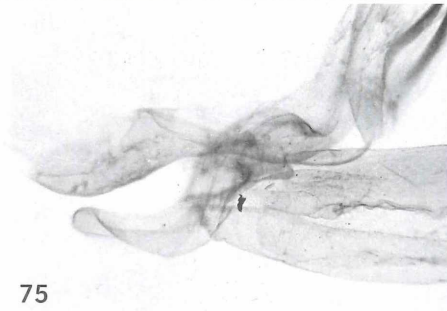
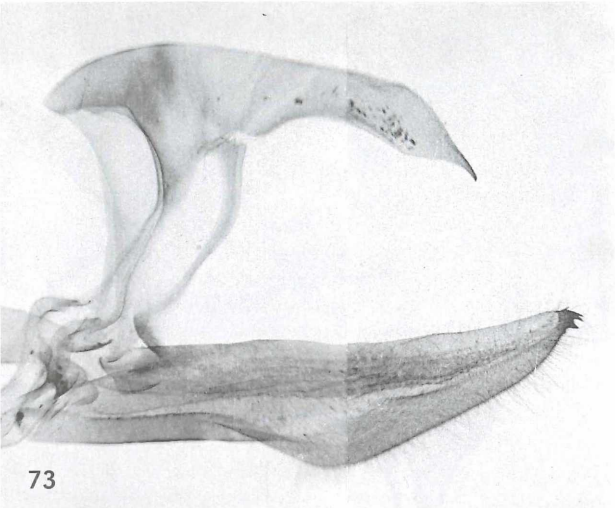
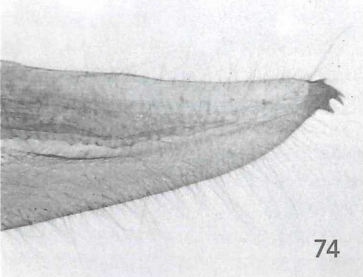
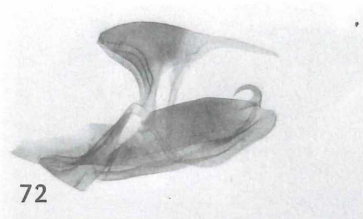


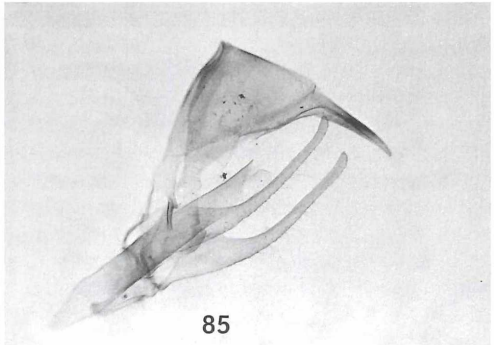
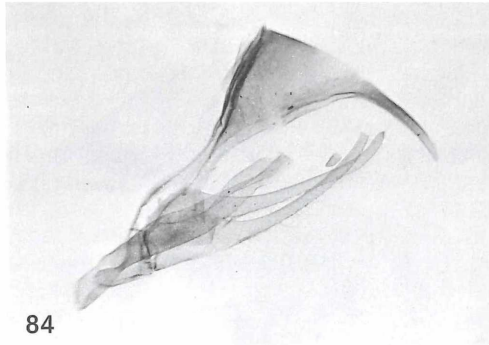
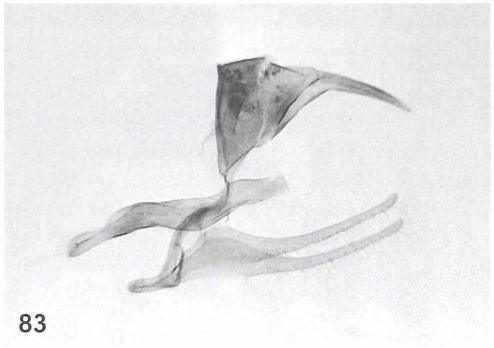
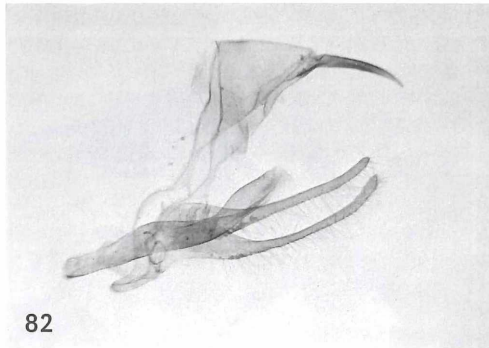
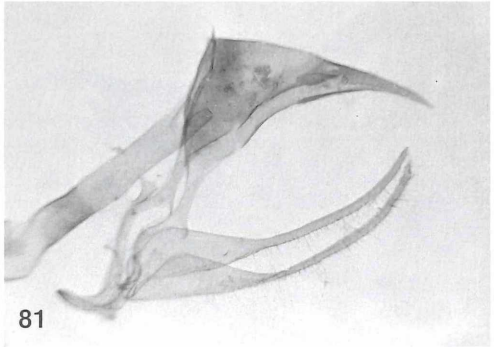
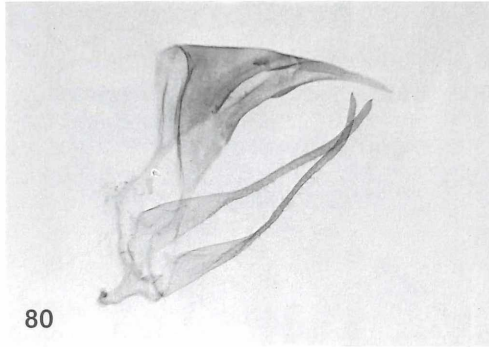
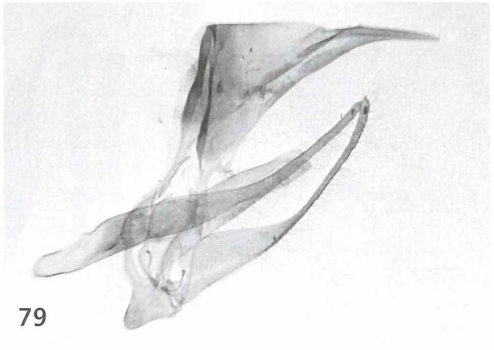
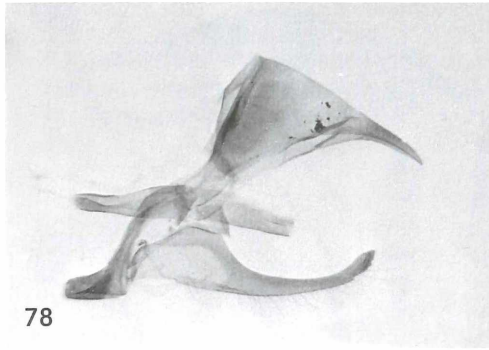
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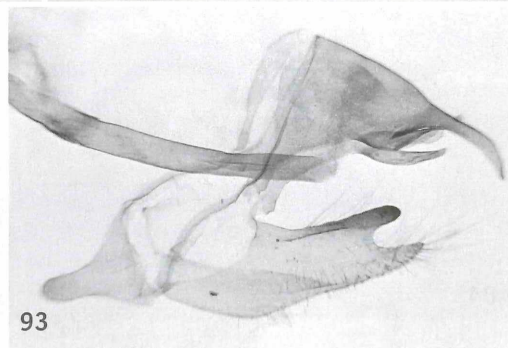
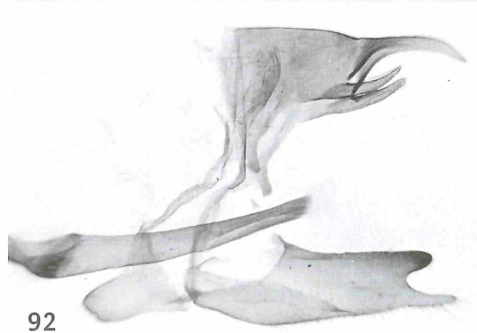
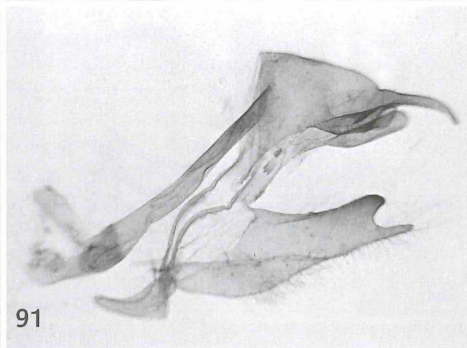
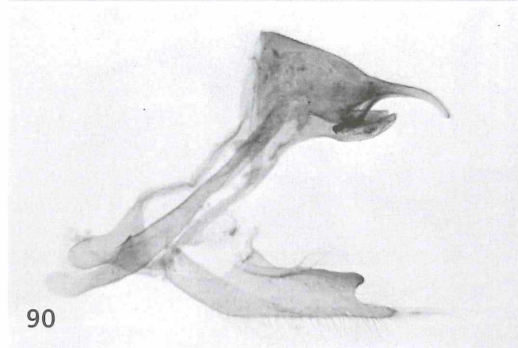
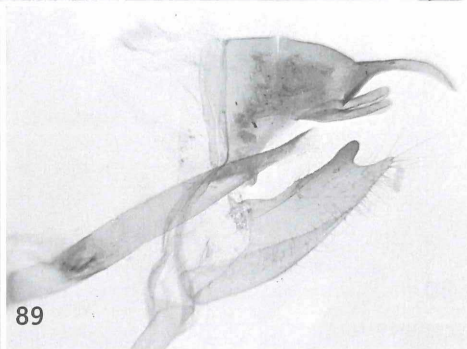
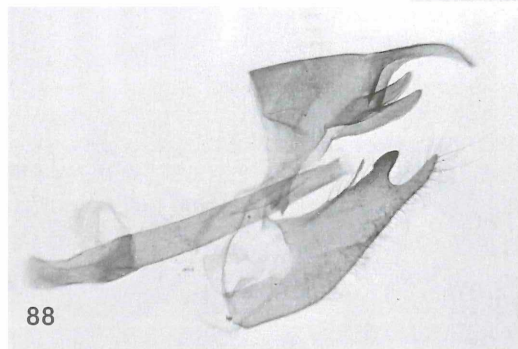
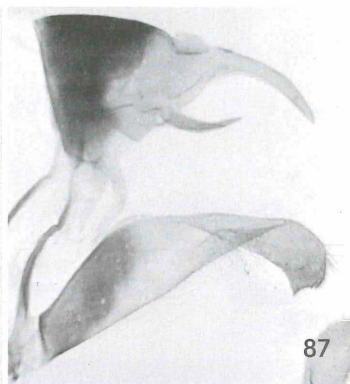
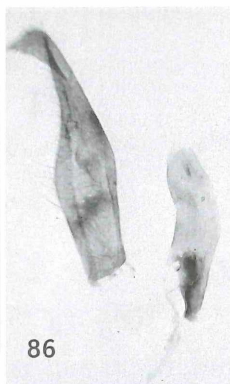
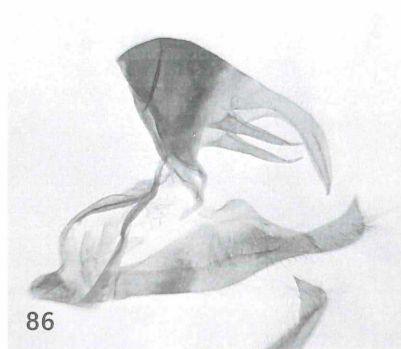


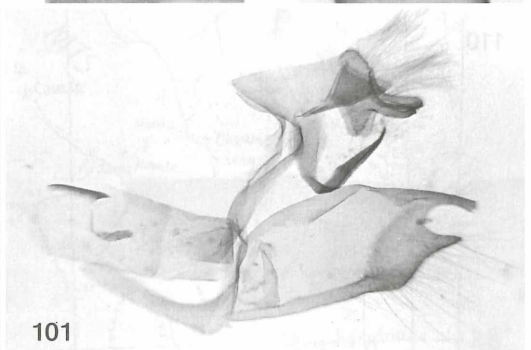
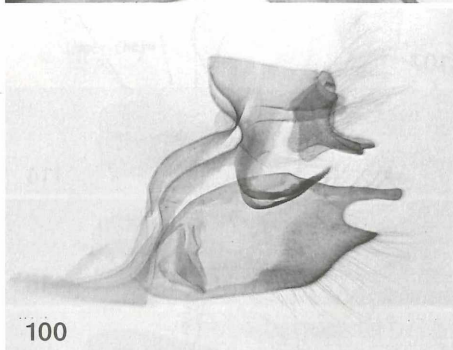
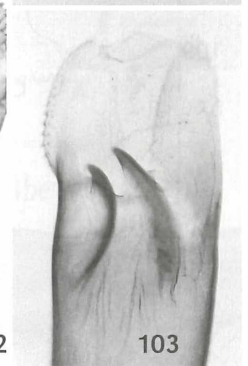
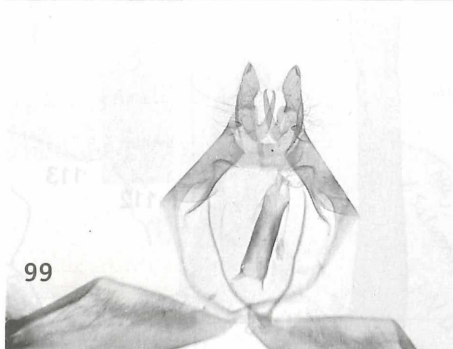
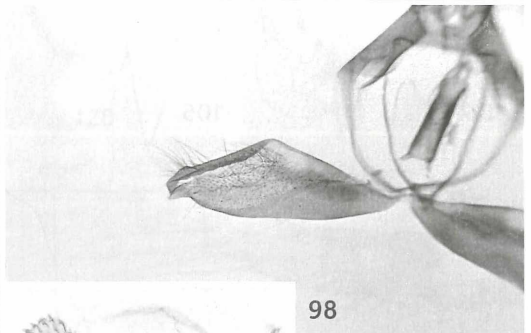
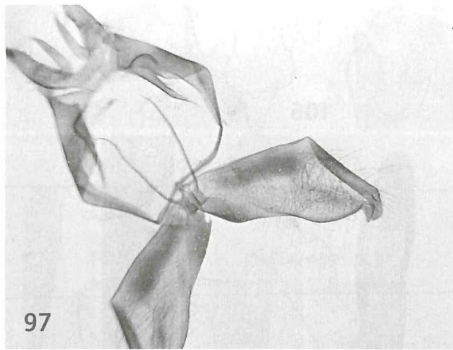
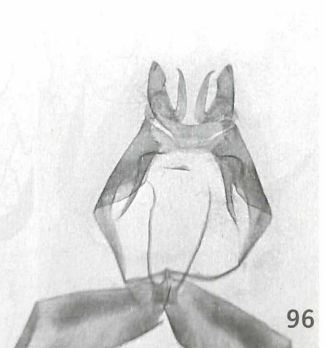
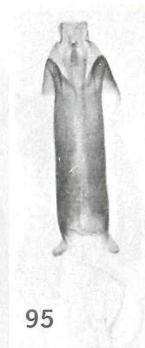
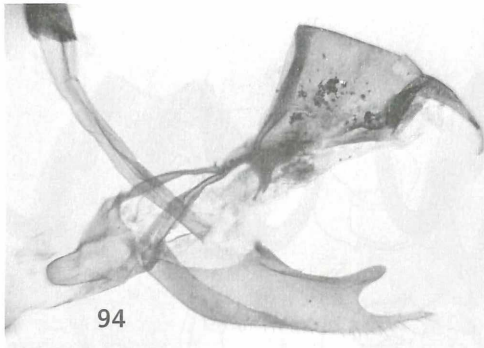
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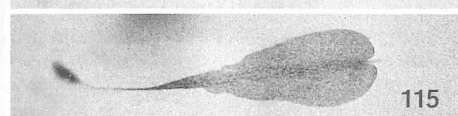
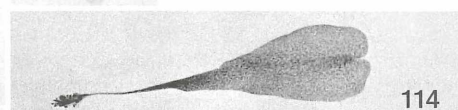
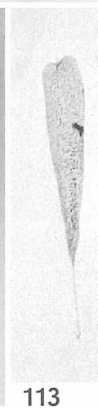
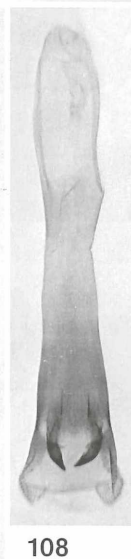
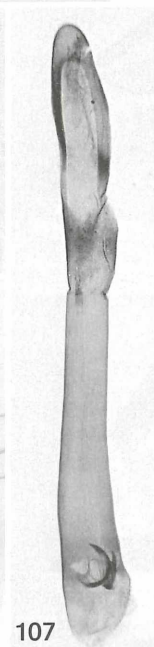
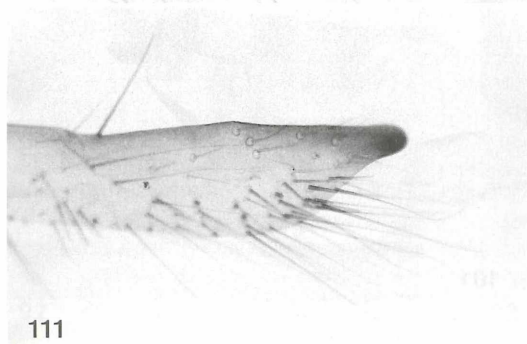
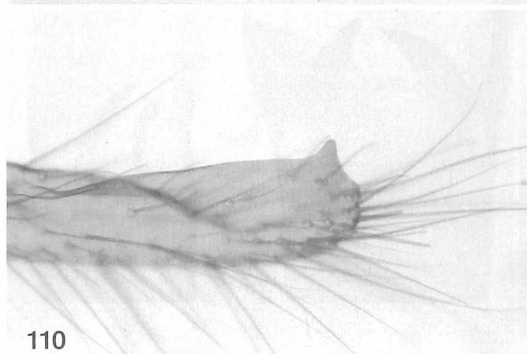
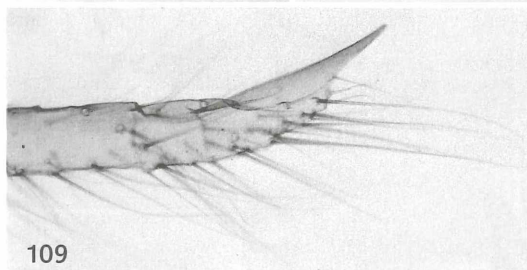
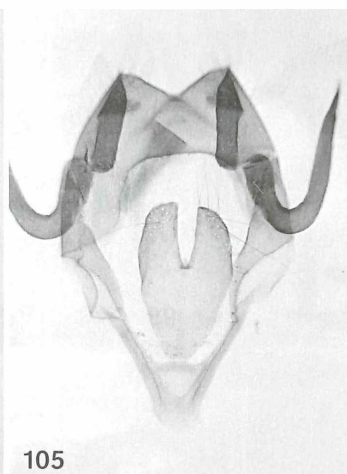












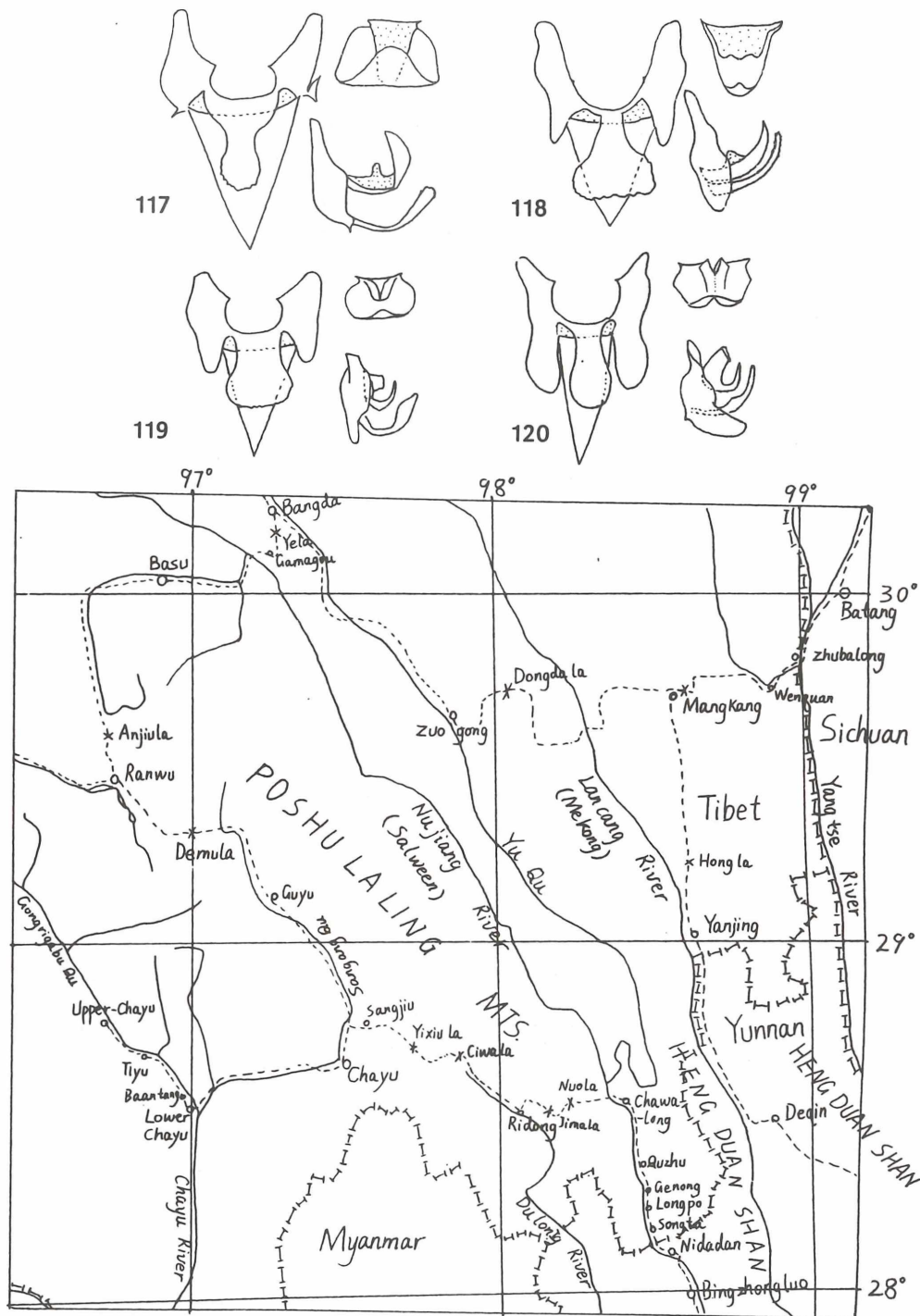
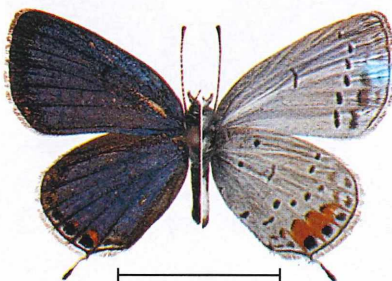
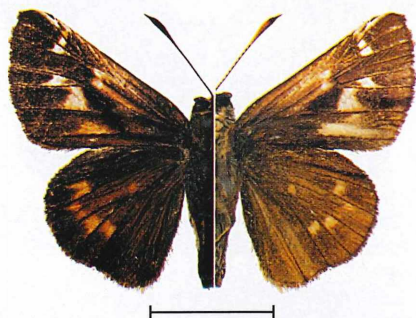
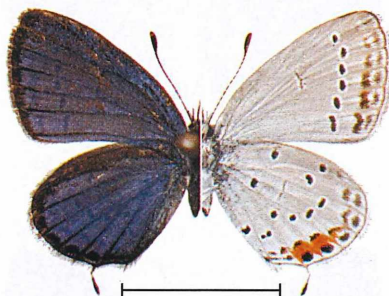
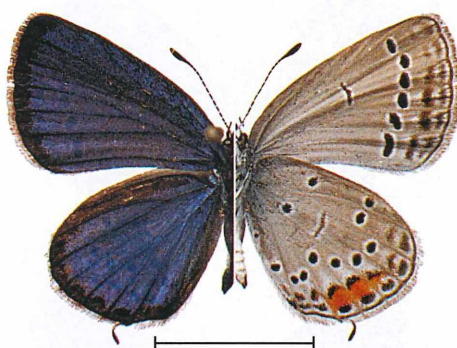
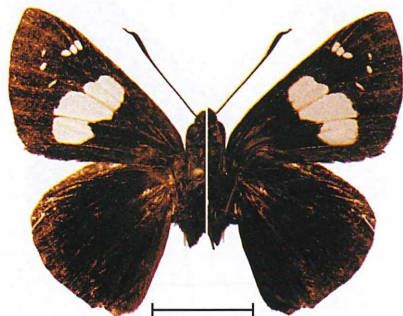
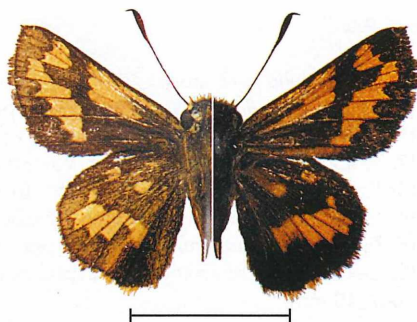
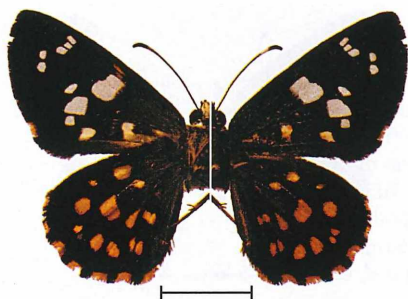


Fig. 121: Map of SE. Tibet showing the collecting localities of H. HUANG's 2000 Expedition.

Colour plate I

- Fig. 1: *Celaenorrhinus ratna nujiangensis* subspec. nov., holotype ♀, DS-right, VS-left.
 Fig. 2: *Notocrypta eitschbergeri* spec. nov., holotype ♂, DS-left, VS-right.
 Fig. 3: *Ochlodes subhyalina chayuensis* subspec. nov., holotype ♂, DS-left, VS-right.
 Fig. 4: *Ochlodes subhyalina chayuensis* subspec. nov., paratype ♀, DS-left, VS-right.
 Fig. 5: *Potanthus taqini* spec. nov., holotype ♂, DS-right, VS-left.
 Fig. 6: *Everes argiades tibetanus*, ♂, DS-left, VS-right, Wenquan of Mangkang, E. Tibet.
 Fig. 7: *Everes argiades nujiangensis* subspec. nov., holotype ♂, DS-left, VS-right.
 Fig. 8: *Everes argiades chayuensis* subspec. nov., holotype ♂, DS-left, VS-right.
 Scale bar: 10 mm.

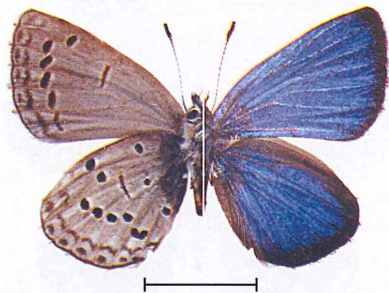
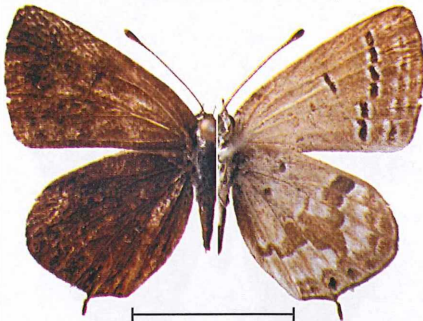
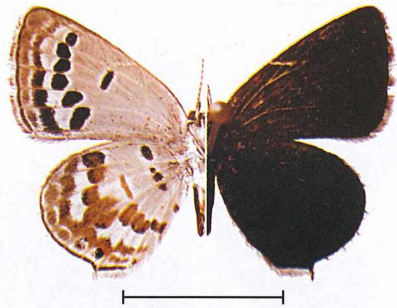
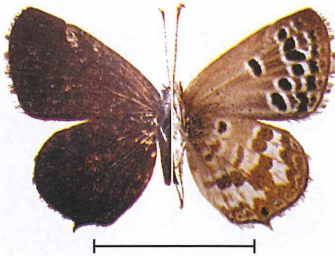
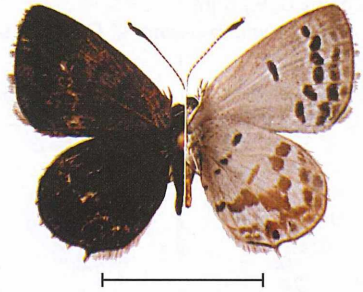
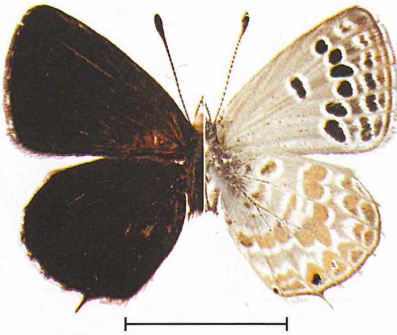
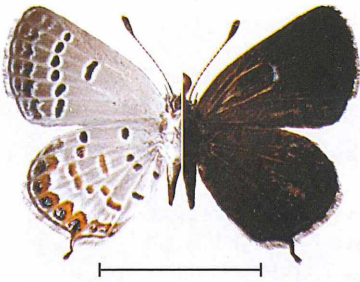
1	5
2	6
3	7
4	8



Colour plate II

- Fig. 9: *Tongeia bella* spec. nov., holotype ♂, DS-right, VS-left.
 Fig. 10: *Tongeia amplifascia* spec. nov., holotype ♂, DS-left, VS-right.
 Fig. 11: *Tongeia amplifascia* spec. nov., paratype ♂, DS-left, VS-right.
 Fig. 12: *Tongeia ion cratylus*, ♂, DS-left, VS-right, Wenquan of Mangkang, E. Tibet.
 Fig. 13: *Tongeia ion ion*, ♂, DS-left, VS-right, Jizushan, N. Yunnan.
 Fig. 14: *Tongeia pseudozuthus* spec. nov., holotype ♂, DS-left, VS-right.
 Fig. 15: *Tongeia pseudozuthus* spec. nov., paratype ♂, DS-right, VS-left.
 Fig. 16: *Celastrina oreas limingani* subspec. nov., holotype ♂, DS-right, VS-left.
 Scale bar: 10 mm.

9	13
10	14
11	15
12	16



Colour plate III

Fig. 17: *Everes argiades tibetanus*, ♀, DS-left, VS-right, Wenquan of Mangkang, E. Tibet.

Fig. 18: *Albulina orbitulus tatsienluica*, ♂, VS-left, Tatsienlu, Sichuan. *Albulina orbitulus luxurians*, ♂, VS-right, Lijiang, Yunnan.

Fig. 19: *Albulina orbitulus dongdalaensis* subsp. nov., holotype ♂, VS-left. *Albulina orbitulus demulaensis* subsp. nov., holotype ♂, VS-right.

Fig. 20: *Lycaena ouang nujiangensis* subsp. nov., holotype ♀, DS-left, VS-right.

Fig. 21: *Everes argiades nujiangensis* subsp. nov., paratype ♀, DS-left, VS-right.

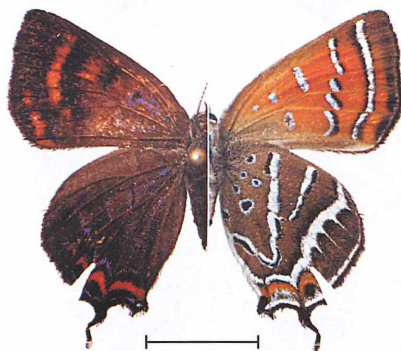
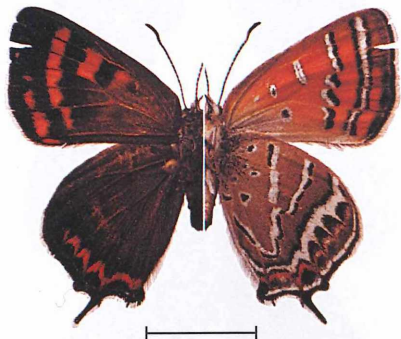
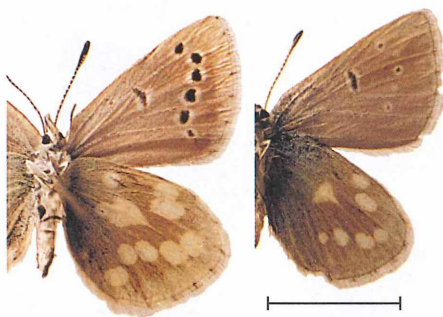
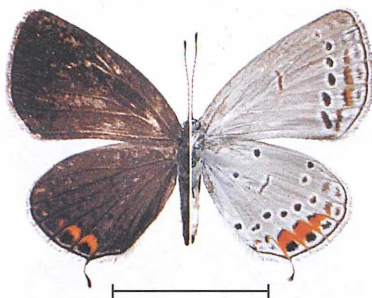
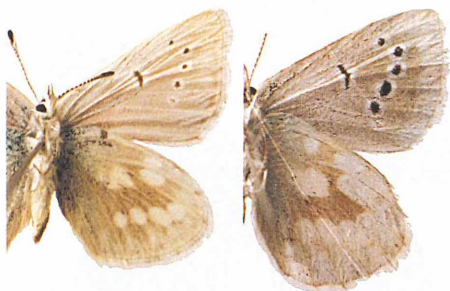
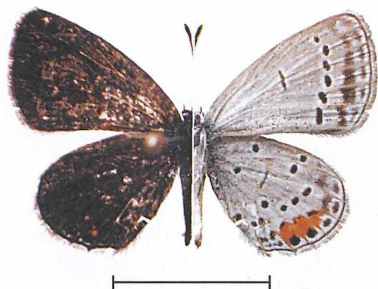
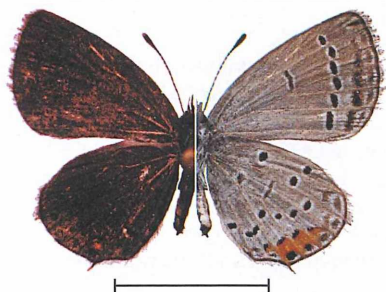
Fig. 22: *Everes argiades chayuwensis* subsp. nov., paratype ♀, DS-left, VS-right.

Fig. 23: *Albulina orbitulus tyrone*, ♂, VS-left, Qilianshan, Gansu. *Albulina orbitulus litangensis* subsp. nov., holotype ♂, VS-right.

Fig. 24: *Lycaena ouang ouang*, ♀, DS-left, VS-right, E. of Mangkang, Tibet.

Scale bar: 10 mm.

17	21
18	22
19	23
20	24



Colour plate IV

Fig. 25: *Lycaena ouang nujiangensis* subsp. nov., paratype ♂, DS-right, VS-left.

Fig. 26: *Satyrrium xumini* spec. nov., holotype ♂, DS-right, VS-left.

Fig. 27: *Esakiozephyrus longicaudatus* spec. nov., holotype ♂, DS-left, VS-right.

Fig. 28: *Esakiozephyrus bieti mangkangensis* subsp. nov., holotype ♂, DS-left, VS-right.

Fig. 29: *Teratozephyrus camurius chayuensis* subsp. nov., holotype ♀, DS-right, VS-left.

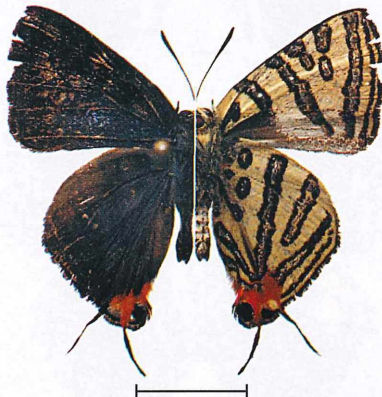
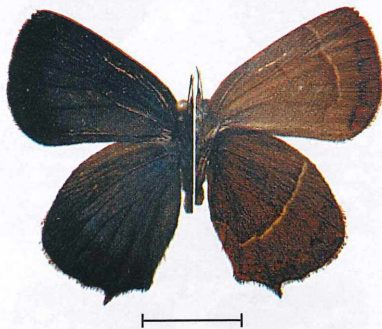
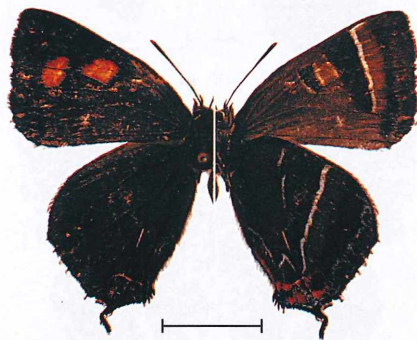
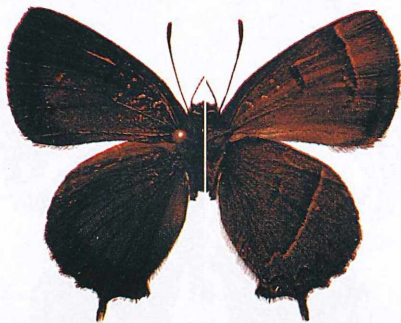
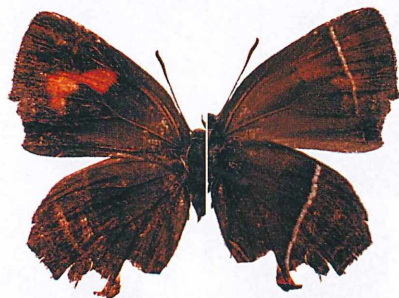
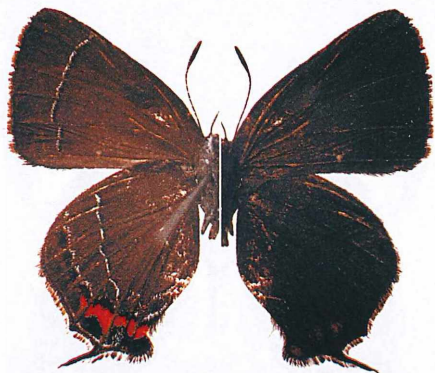
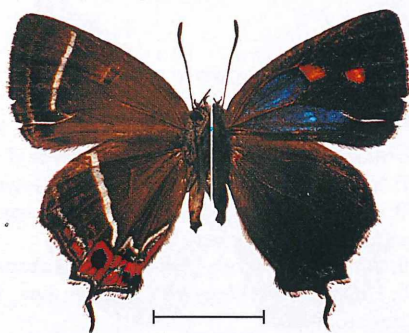
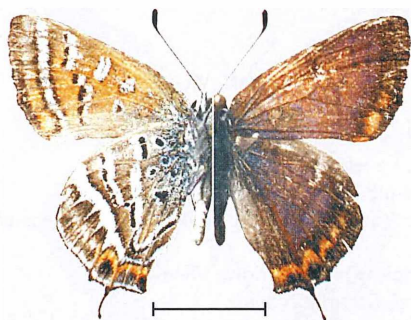
Fig. 30: *Teratozephyrus tsangkie* ssp., ♀, DS-left, VS-right, Longpo, Nujiang Valley, Tibet.

Fig. 31: *Chrysozephyrus parakuromon* spec. nov., holotype ♀, DS-left, VS-right.

Fig. 32: *Spindasis zhengweilie chayuensis* subsp. nov., holotype ♂, DS-left, VS-right.

Scale bar: 10 mm.

25	29
26	30
27	31
28	32



Colour plate V

Fig. 33: *Spindasis zhengweilie chayuensis* subspec. nov., paratype ♀, DS-left, VS-right.

Fig. 34: *Abisara chelina duanhuii* subspec. nov., holotype ♂, DS-left, VS-right.

Fig. 35: *Abisara neophron*, ♂, DS-left, VS-right, Metok, Tibet.

Fig. 36: *Neptis sangangi* spec. nov., holotype ♂, DS-right, VS-left.

Fig. 37: *Neptis pseudonamba* spec. nov., holotype ♂, DS-right, VS-left.

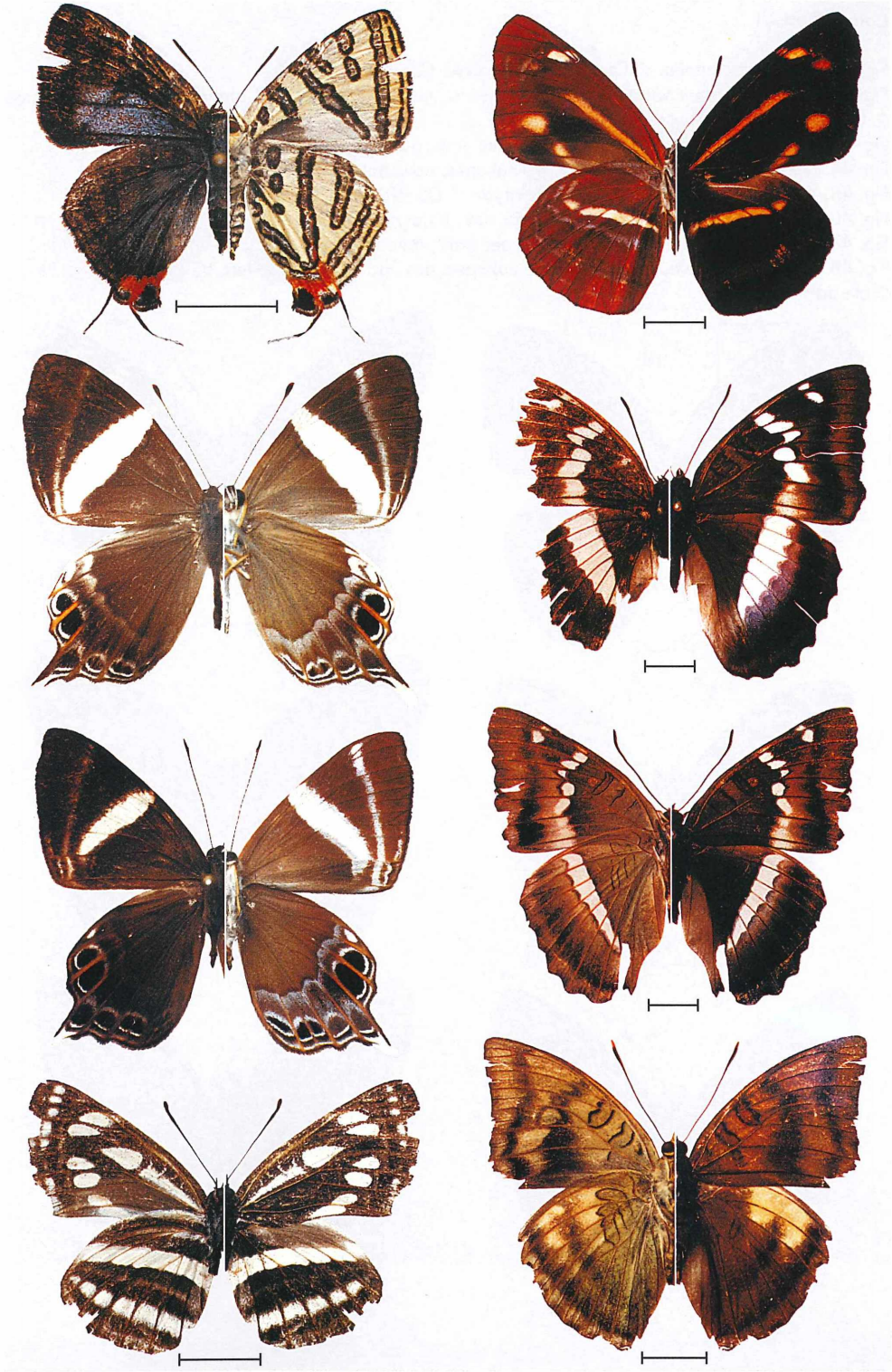
Fig. 38: *Euthalia alpherakyi chayuensis* subspec. nov., paratype ♂, DS-left. *Euthalia alpherakyi chayuensis* ssp. nov., holotype ♀, DS-right.

Fig. 39: *Euthalia alpherakyi nujiangensis* subspec. nov., holotype ♀, DS-right, VS-left.

Fig. 40: *Euthalia nara chaywana* subspec. nov., holotype ♂, DS-right, VS-left.

Scale bar: 10 mm.

33	37
34	38
35	39
36	40



Colour plate VI

Fig. 41: *Euthalia pulchella*, ♂, DS-left, VS-right, Tiyu, Chayu area, Tibet.

Fig. 42: *Limenitis populi batangensis* subsp. nov., holotype ♀, DS-left. *Limenitis populi szechwanica*, ♀, DS-right, Qinling Mts., Shaanxi.

Fig. 43: *Fabriciana adippe chayuensis* subsp. nov., paratype ♀, DS-right, VS-left.

Fig. 44: *Kuekenthaliella eugenia pulchella* subsp. nov., holotype ♂, DS-left, VS-right.

Fig. 45: *Ypthima yangjiahei* spec. nov., holotype ♂, DS-left, VS-right.

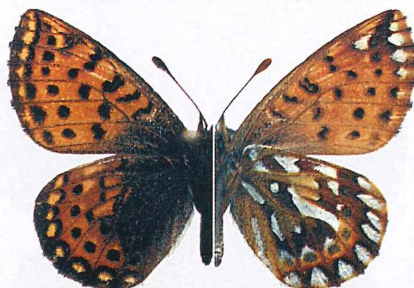
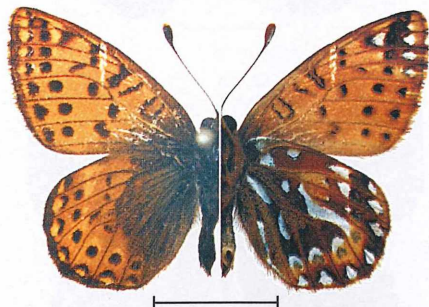
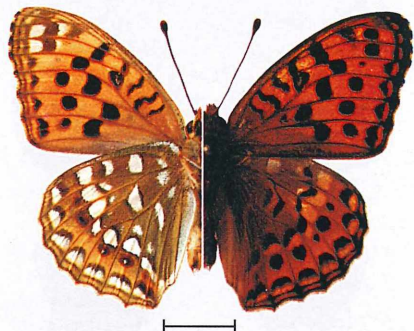
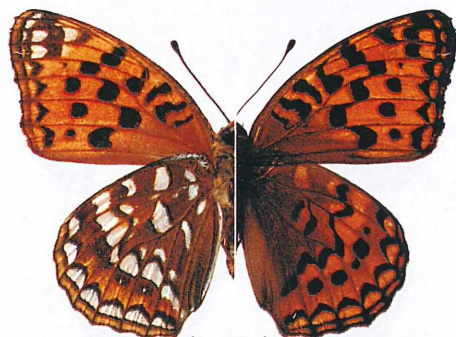
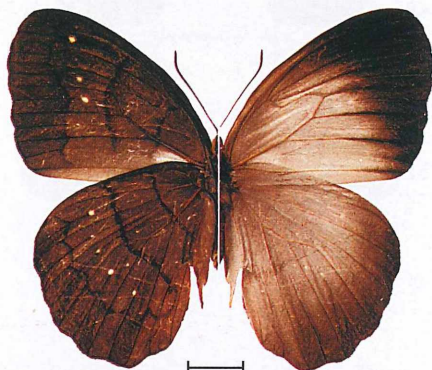
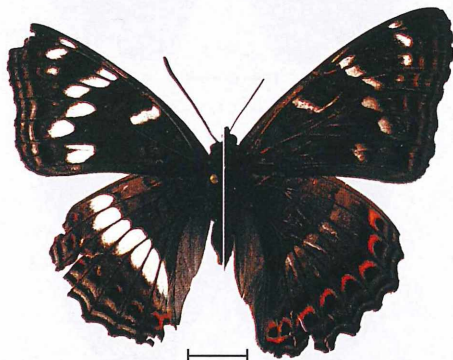
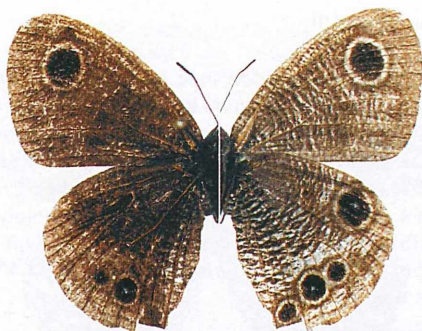
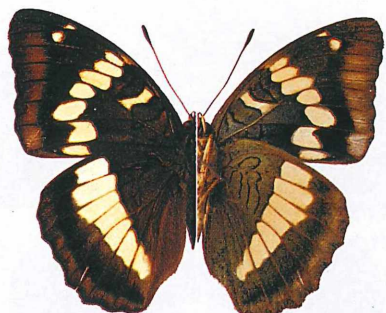
Fig. 46: *Faunis aerope longpoensis* subsp. nov., holotype ♀, DS-right, VS-left.

Fig. 47: *Fabriciana adippe chayuensis* subsp. nov., holotype ♂, DS-right, VS-left.

Fig. 48: *Kuekenthaliella eugenia pulchella* subsp. nov., paratype ♀, DS-left, VS-right.

Scale bar: 10 mm.

41	45
42	46
43	47
44	48



Colour plate VII

Fig. 49: *Ypthima dengae* spec. nov., paratype ♂, DS-left, VS-right.

Fig. 50: *Ypthima tiani nuae* subspec. nov., paratype ♂, DS-left, VS-right.

Fig. 51: *Ypthima sakra nujiangensis* subspec. nov., holotype ♂, DS-left, VS-right.

Fig. 52: *Lethe jalaurida nuolaensis* subspec. nov., holotype ♂, DS-left, VS-right.

Fig. 53: *Ypthima dengae* spec. nov., holotype ♀, DS-right, VS-left.

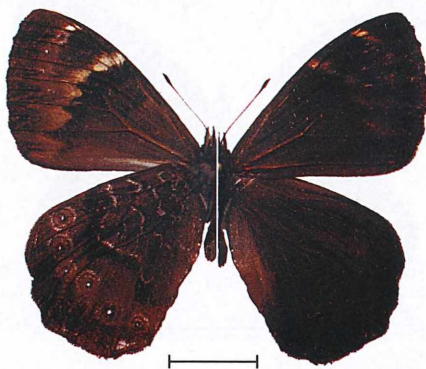
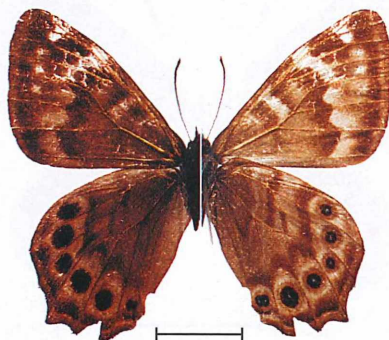
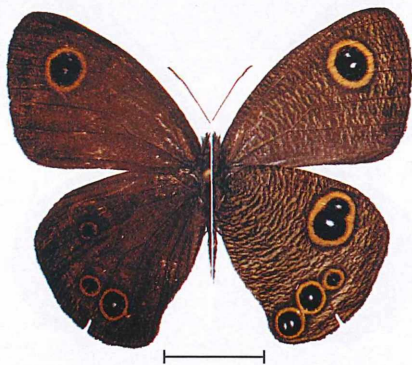
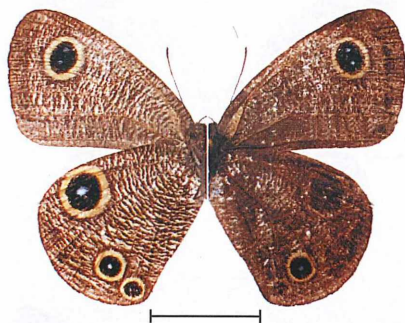
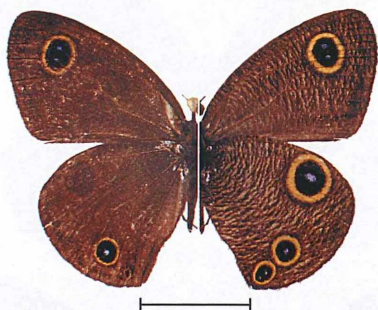
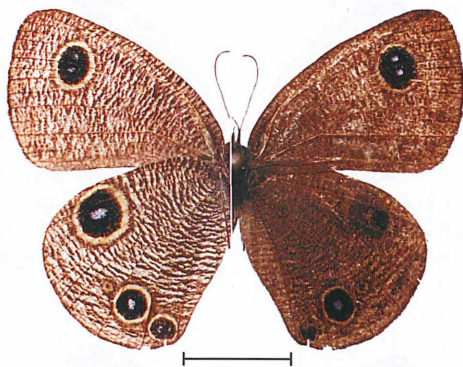
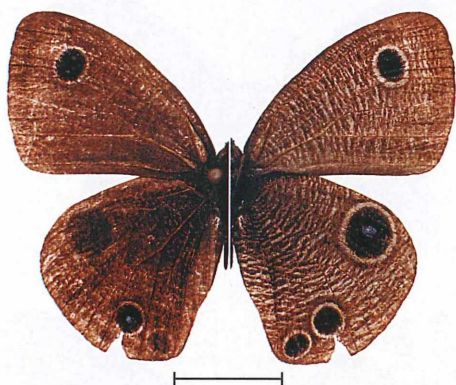
Fig. 54: *Ypthima tiani nuae* subspec. nov., holotype ♀, DS-right, VS-left.

Fig. 55: *Lethe gesangdawai* spec. nov., holotype ♂, DS-left, VS-right.

Fig. 56: *Lethe maitrya thawgawa*, ♂, DS-right, VS-left, Nuola, Nujiang Valley, Tibet.

Scale bar: 10 mm.

49	53
50	54
51	55
52	56



Colour plate VIII

Fig. 57: *Paroeneis parapumilus* spec. nov., holotype ♂, DS-left, VS-right.

Fig. 58: *P. palaearcticus buddha*, ♂, DS-left, VS-right, West Qilianshan, Gansu.

Fig. 59: *P. palaearcticus iole*, ♂, DS-left, VS-right, Tatsienlu, Sichuan.

Fig. 60: *P. palaearcticus atuntsensis*, ♂, DS-left, VS-right, Demula, Tibet.

Fig. 61: *Aulocera saraswati chayuiensis* subspec. nov., holotype ♂, DS-right, VS-left.

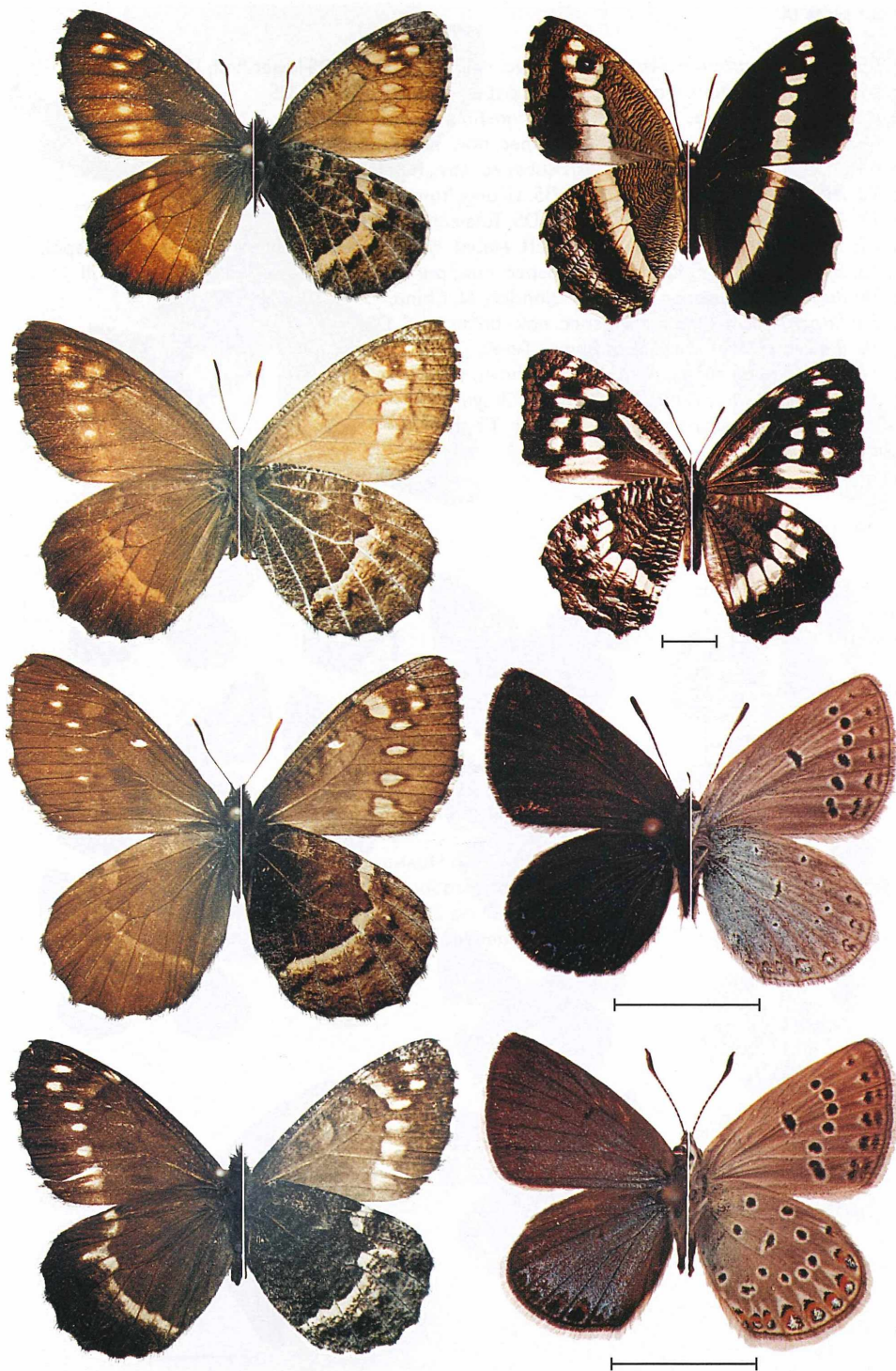
Fig. 62: *Aulocera merlina pulcheristriata* subspec. nov., holotype ♀, DS-right, VS-left.

Fig. 63: *Albulina lucifuga*, ♂, DS-left, VS-right, Batang, Sichuan-Tibet border.

Fig. 64: *Albulina themis*, ♂, DS-left, VS-right, Xinglongshan, Gansu.

Scale bar: 10 mm.

57	61
58	62
59	63
60	64



Colour plate IX

- Fig. 65: *Byasa dasarada nujiangana* subsp. nov., paratype ♀, DS-lower half, VS-upper half.
 Fig. 66: *Albulina orbitulus dongdalaensis* subsp. nov., holotype ♂, DS.
 Fig. 67: *Albulina orbitulus tyrone*, ♂, DS, Qilianshan, Gansu.
 Fig. 68: *Albulina orbitulus litangensis* subsp. nov., holotype ♂, DS.
 Fig. 69: *Albulina orbitulus demulaensis* subsp. nov., holotype ♂, DS.
 Fig. 70: *Albulina orbitulus luxurians*, ♂, DS, Lijiang, Yunnan.
 Fig. 71: *Albulina orbitulus tatsienluica*, ♂, DS, Tatsienlu, Sichuan.
 Fig. 72: *Ypthima confusa confusa*, ♀, VS-left, Nepal. *Ypthima newara newara*, ♀, VS-right, Nepal.
 Fig. 73: *Byasa dasarada nujiangana* subsp. nov., paratype ♀, DS-lower half, VS-upper half.
 Fig. 74: *Rapala micans micans*, ♂, DS, Qingdao, N. China.
 Fig. 75: *Rapala micans haniae* subsp. nov., holotype ♂, DS.
 Fig. 76: *Rapala nissa ranta*, ♂, DS, Chayu, Tibet.
 Fig. 77: *Rapala nemorensis*, ♂, DS, Upper-Chayu, Tibet.
 Fig. 78: *Celaenorrhinus patula*, ♂, DS, Tiyu, Chayu area, Tibet.
 Fig. 79: *Celaenorrhinus patula*, ♂, DS, Metok, Tibet.
 Scale bar: 10 mm.

65		73	
66	69	74	
			78
67	70	75	
68	71	76	
			79
72		77	

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